


# THE CONTINENTS AND THEIR PEOPLE



SOUTH AMERICA  
CHAMBERLAIN



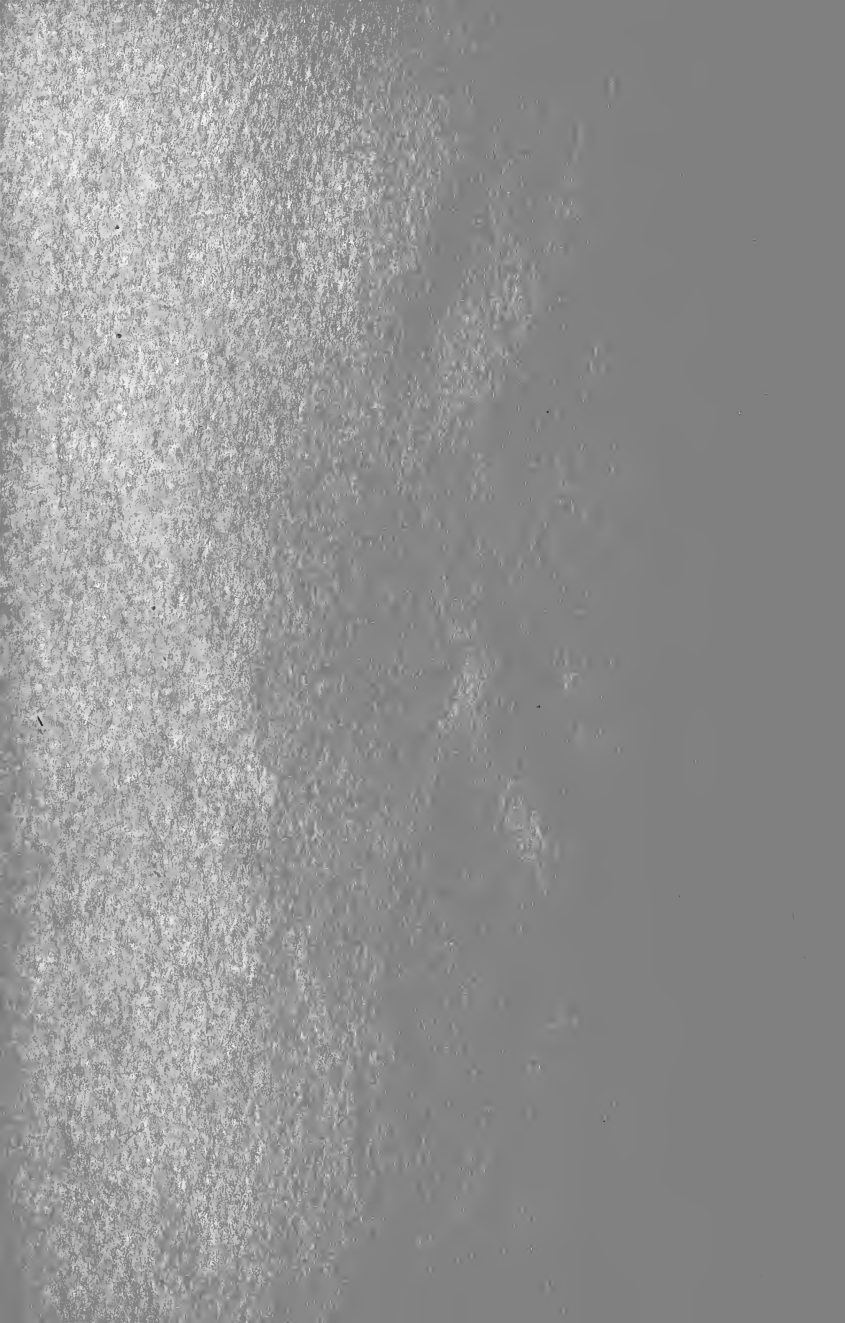
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SOUTH AMERICA

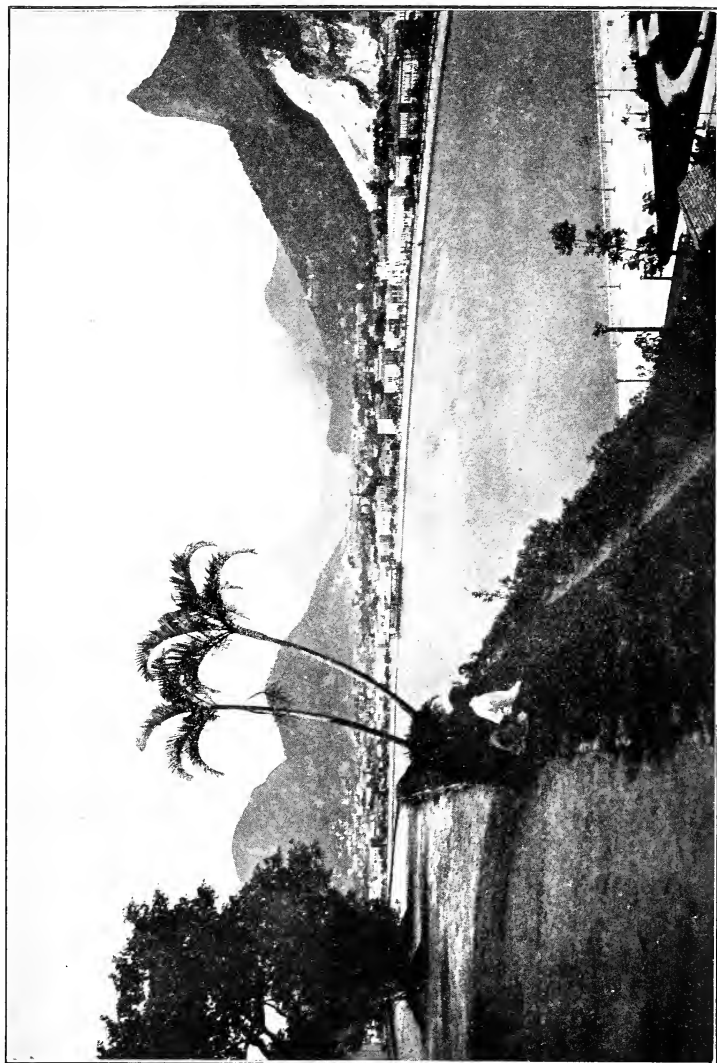


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TORONTO





BACKGROUND OF RIO DE JANEIRO.

*Courtesy of Lamport and Holt Line.*

THE CONTINENTS AND THEIR PEOPLE

# SOUTH AMERICA

## A SUPPLEMENTARY GEOGRAPHY

BY

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## PREFACE

No part of the world is attracting more attention than is our sister continent—South America. Along all lines there are evidences of great progress. The Transandine Railroad now unites the Pacific and the Atlantic coasts. Vast sums of money have been used in improving harbor facilities. Sanitary science has made the tropical ports safe places for the white man. Social conditions have been greatly bettered, and educational systems are rapidly undergoing reorganization. The wonderful scenery and the interesting evidences of a vanished civilization found on the Andean plateaus are each year drawing to South America a large number of visitors.

Commercially South America is a field of rapidly increasing importance. A very large part of the world's supply of coffee comes from the state of São Paulo in Brazil. The forests of the Amazon furnish vast supplies of rubber. Argentine Republic figures



prominently in supplying the world with bread and meat. From Chile the countries of western Europe and the United States draw supplies of nitrate of soda to be used in keeping up the fertility of their soils. Peru has for centuries been a storehouse of silver. The cocoa industry is very important in Ecuador. This is only a partial enumeration of the raw products which South America produces in abundance.

Much of the land, on the temperate plains of the continent even, is unused and invites settlement. In response to this, large numbers of people from Italy, Portugal, Spain and France are pouring in and making homes. There is a demand for rolling-stock, railroad-rails, agricultural machinery and tools, wind-mills, wire for fences, and many other lines of manufactured articles. The opening of the Panama Canal will promote the development of the whole western slope.

In the city of Washington, District of Columbia, there stands a beautiful building of white marble. This is the home of the Pan American Union, an organization that represents twenty-one American republics and has for its purpose the furthering of their mutual knowledge, interest and helpfulness. Under the leadership of Director General John Barrett, the great work of bringing these countries into more sympathetic relations is going steadily forward.

As one means of realizing its purpose, the Pan American Union publishes an illustrated monthly magazine descriptive of all the Central and South American countries, and it issues numerous reports showing their progress and development. It is, in short, a great international bureau of information, where everybody can have questions answered in regard to the countries lying south of the United States as well as about the United States itself, and it will always welcome inquiries from the school children of the United States.

As in previous volumes of *The Continents and Their People* series, an attempt has been made here to present the physical and human phases of geography in such a way as to cause them to appeal to the interests of children and to lead pupils to see the more obvious relationships between the two.

For a careful reading of the entire manuscript and for many helpful criticisms, the authors tender their thanks to Dr. Fred Allison Howe, Head of the Department of English of the Los Angeles State Normal School. For the use of photographs the authors desire to express their indebtedness to the Pan American Union, to "South America," the Lamport and Holt Line, Rafael del Castillo and Company, New York, Professor R. De C. Ward of Harvard University, Professors Hiram Bingham, Isaiah Bowman and Harry

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PASADENA, CALIFORNIA.

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FIG. 1.



# SOUTH AMERICA

## CHAPTER I

### THE SOUTH AMERICAN CONTINENT

CLOSE to the place where the many mouths of the Orinoco River pour their muddy waters into the sea, lies one of the most interesting islands in the world, an island upon which there is a lake of pitch. For ages petroleum has been coming to the surface of the earth where this lake is situated. On exposure to the air the petroleum hardens into a substance called pitch. This black and unattractive material is very useful, for it enters into the construction of the asphalt pavements so common in the cities of the United States and Europe.

If you were to visit Port of Spain, the largest city and the chief port of the island, you would see ships loaded with pitch ready to sail to the United States or Europe. At the lake you would find many men digging the pitch by means of picks. Probably you are wondering why the term *lake* is applied to this deposit. Near the borders people can walk upon it, and tram



*Courtesy of Pan American Union.*

FIG. 2.—Digging asphalt in Trinidad. Photo by William H. Rau, Philadelphia.

cars are run back and forth upon a roadbed made of logs and poles. In the middle of the lake the pitch is so soft that it bubbles. The depressions formed by digging the pitch are very quickly filled, as the material moves in by a sort of flowing motion, from the sides and from below.

The lake apparently occupies the crater of an extinct volcano. In one place a stream of pitch about fifteen feet in width slowly flows from a notch in the rim of the crater. In the lake are a few small wooded islands.

Six years after Columbus discovered North America, he was in command of a fleet sailing northwestward not far from the coast of Venezuela. Suddenly the lookout announced that land was in sight. On the horizon three mountain peaks appeared to rise from the sea. The discoverers soon found that this land was an island. They gave it the name of *Trinidad*, some say because the first view of it showed the three mountain tops.

This island discovered by Columbus so long ago is the island upon which is located the lake of pitch. This event probably marks the discovery of South America, although Columbus died ignorant of the real importance of his work. Other explorers quickly followed, and many settlements were made on both the Atlantic and the Pacific coasts of South America. The first of these was Cumana, in what is now Ven-

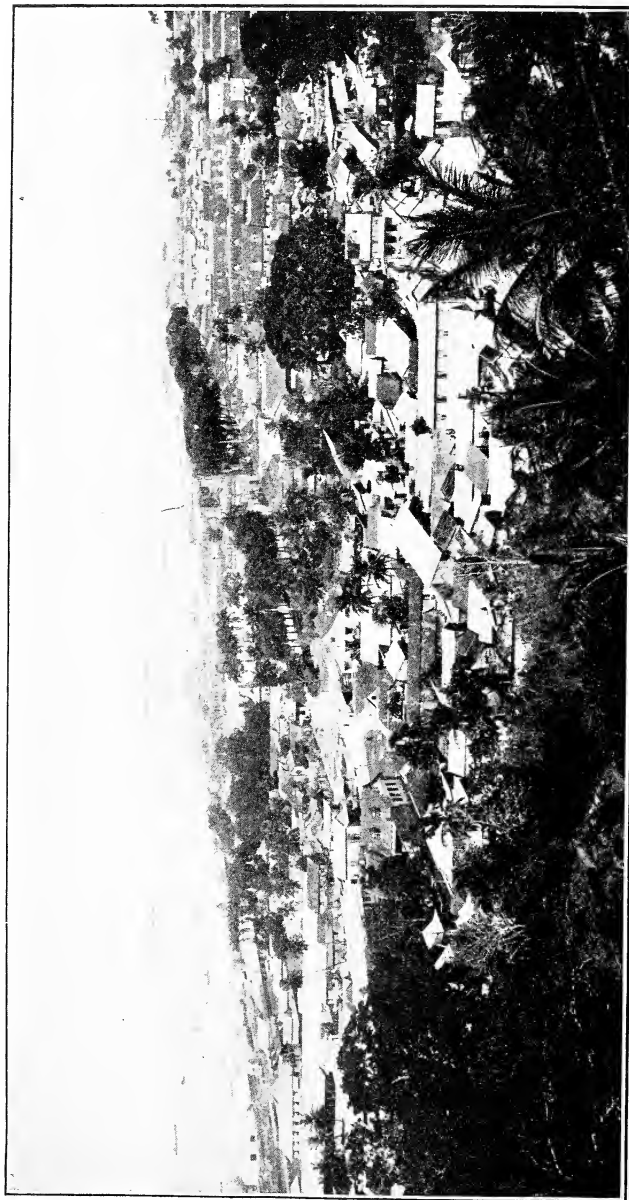


FIG. 3. — Port of Spain, Trinidad.

*Courtesy of Pan American Union.*

ezuela, founded in the year 1521. This is the oldest permanent European settlement in the New World. What is the oldest European settlement in North America?

While but a small part of North America lies in the torrid zone, a large part of South America is so situated. Point Gallinas in Venezuela is about eight degrees north of the equator, while Cape Horn is practically fifty-five degrees south of the equator. North America is widest in the temperate zone, but South America has its greatest width in the torrid zone. Using the scale, find the greatest length of South America along the meridian, and the east to west dimension on the fifth parallel of latitude south.

You will observe that practically all of South America lies east of the eightieth meridian of west longitude. Trace this meridian northward and you will see that it just touches the southwestern coast of Florida, passes within a few miles of Pittsburgh, Pennsylvania, and crosses the eastern part of Hudson Bay. Because of the position of our southern neighbor, it might as truly be called East America as South America. Each day the sun rises in Rio Janeiro more than two hours before it rises in Pittsburgh. Can you explain this?

The Isthmus of Panama connects the two Americas. It was from this isthmus that Balboa discovered the Pacific Ocean in 1513. Where this isthmus is the nar-

rowest, the Panama Canal was completed in 1913. The channel of the canal is broad and deep and big enough to accommodate the largest ocean vessels. The water route from the Atlantic to the Pacific through this canal is thousands of miles shorter than the old route around Cape Horn. Coast trade between the eastern and the western ports of the American continents and even ocean trade between Europe and Asia can now be carried on more quickly and easily than before the canal was built.

The coast line of South America is more regular than that of our continent, or of Europe. It has no great projections such as Alaska, Labrador and Florida, and no great indentations such as Hudson Bay and the Gulf of Mexico. The central part of the western coast of South America is remarkably regular. This is due to the fact that the land in that section is rising. The lack of good harbors is a great disadvantage to commerce. In some cases ships must load and unload their cargoes some distance from shore. This is done by means of flat-bottomed boats called *lighters*. The southwestern coast is very irregular, being much like that of Norway or southern Alaska. This irregularity is due to a sinking of the land and to glacial action.

The area of South America is about 7,000,000 square miles. It is very much larger than Europe, and nearly twice as large as Australia, but it is much smaller than



FIG. 4. — Relief map of South America.



any of the other continents. Find the area of Asia and Africa.

As in North America, we find a mountain system in the east, plains in the interior, and mountains parallel to the western coast. The Serra do Espinhaco is the name of the chief range in the eastern system. Although one of them is nearly 10,000 feet in altitude, none of the peaks rise above the snow line.

The Andes are among the loftiest mountains in the world. Even in the torrid zone many of their peaks are permanently snow-covered. Bolivia has several mountains more than 20,000 feet in altitude, while Aconcagua, in Argentina, is nearly 24,000 feet high. In a geological sense the Andes are young, and there are in the system many volcanic mountains, while earthquakes are of frequent occurrence. In the southern part of Chile, owing to abundant precipitation, there are many glaciers and much timber.

The Andes, like the Rocky Mountains, form a serious obstacle to the construction of railroads. Only one railroad connects the Atlantic and the Pacific coasts. This extends from Valparaiso on the west to Buenos Aires on the east. Lofty plateaus in the temperate zone are too cold to favor settlement, but those of tropical South America are thickly populated. It was upon these plateaus that the most highly civilized of the ancient inhabitants lived.

Three great rivers drain the Atlantic slope of South America — the Orinoco, the Amazon and the La Plata. These rivers are navigable for long distances and are important commercially. This is particularly true of the Amazon. Some of the commerce between the western coast of South America and our eastern coast and Europe, is carried on by way of the Amazon and its tributaries. There are few towns along the mighty Amazon because much of its basin is a dense forest.

As so much of South America is situated in the torrid zone, cotton, rice, sugar, coffee, cocoa, bananas, oranges and rubber are important products. While it is always summer on the lowlands in the tropical portions of the continent, perpetual winter reigns upon the most lofty mountains. In ascending from the plains of the Amazon to the top of Chimborazo or Cotopaxi one would pass through all of the zones, and see the forms of life that belong to each.

The southern part of South America is as far from the equator as is central Labrador, and it therefore has cold winters. While for us July is a midsummer month, it is a midwinter month in all of South America south of the equator. This does not mean cold weather, however, except upon the mountains and in the southern part.

North of the equator the northeast trade winds

prevail, while the southeast trades prevail in that part of the continent between the thirtieth parallel south and the equator. These winds, having blown over the ocean, are full of moisture. As they come in contact with the Guiana Highlands, the Brazilian Highlands

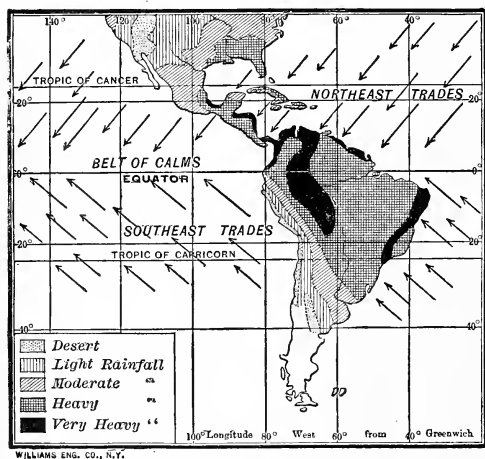


FIG. 5.—Map showing distribution of rainfall.

and the Andes, they are chilled and rain falls in abundance. The dense forests of the Amazon basin are due to the heavy rainfall and the high temperature. The trades have the effect of making the

summers cooler than they otherwise would be.

In the neighborhood of the equator the northeast and the southeast trade winds meet. In this belt, known as the *Doldrums*, the air, owing to the low pressure, is constantly rising. When the rising air reaches a great height, it is cooled to such an extent that rain falls. This occurs practically every day, and therefore this belt is often called the *belt of daily rains*.

During the summer season for the northern hemisphere this belt moves northward, and during the winter season it moves southward. This shifting of the Doldrums brings the rainy and dry seasons to certain parts of equatorial South America.

That part of the western coast which is situated in the trade wind belt and outside of the Doldrums is very dry because the rain is deposited on the east side of the Andes. Here is situated the long and narrow Atacama Desert. Farther south where the westerly winds prevail the west coast is abundantly watered, and has dense forests.

South America is very rich in minerals, especially in the western part. Here gold and silver have been mined for many centuries. When the Spanish landed they found much gold and silver in the possession of the natives. This was largely in the form of plate and ornaments used in the temples and in the palaces of the Incas.

There are to-day vast deposits of gold, silver, copper, mercury, iron, tin and petroleum. In Brazil diamonds are mined, while Colombia leads the world in the production of emeralds, and Chile has vast wealth in the form of nitrate of soda, used as a fertilizer.

Industry and commerce are not as highly developed in South America as they are in North America and Europe. Lack of development is due to several causes.

In some sections tropical climate is a hindrance. The dense forests along the Amazon make it difficult for man to obtain a foothold. As already pointed out, the lofty Andes make it exceedingly expensive to connect the east and the west by rail. For a long time there has been much political disturbance in South America, and this is another obstacle to rapid progress.

For about three centuries the people of South America were governed by Spain and Portugal, but they finally rebelled and established republics. The continent is now made up of ten republics and three colonies. There are a large number of Indians and they are of comparatively little direct aid in the development of the continent.

South America is undergoing a great transformation, however. People from some of the crowded countries of Europe, especially Italy and Portugal, are pouring into the continent and settling on the rich agricultural lands. This is especially true in Argentine Republic where there are vast prairies like those in the United States and Canada. Here wheat, corn, flax and other crops are grown, and great herds of horses, cattle and sheep roam. Both settlers and capital are being attracted to Brazil on account of the coffee industry.

The exports of South America are chiefly raw products. Minerals, meat, hides, wool, grain, rubber, coffee and cocoa are important. The imports are for

the most part manufactured goods. Although we export to South America farming implements, cars, engines, carriages, sewing machines, typewriters, cotton goods and many other things, our commerce with South America is much smaller than is that of Great Britain or Germany. Both of these countries outrank us in the number of ships engaged in commerce, and they make more effort to secure trade than do we.

Each year the number of tourists who visit South America increases. Her wonderful scenery, her climate, her wealth of tropical plants, the remnants of her ancient civilizations and her beautiful modern cities are attracting many people. Thus our sister continent is rapidly coming to occupy a very important place in industry, commerce and travel.

## CHAPTER II

### VENEZUELA

IF you were to visit the shores of Lake Maracaibo, you would find many Indians living in huts built upon poles or stakes driven into the marshy ground that borders this large body of water. For hundreds of years the Indians have lived in this fashion; for as early as 1499, Ojeda, a Spaniard who had previously sailed with Columbus, entered the lake, and finding a village built in this manner, he called it Venezuela, meaning *Little Venice*, because it reminded him of Venice, Italy. The name then given to an Indian village came to be applied to the whole country.

One of the villages that we can visit to-day is Santa Rosa. It is but a short distance from the city of Maracaibo, and is one mile from the shore of the lake. The walls of the houses are of woven rushes and grasses, and the roofs are thatched. Tied to the poles upon which the houses are built we see canoes, for these furnish the only means of communication with the land.

The largest of these settlements is a town of considerable size, having a population of about 3000. Its





FIG. 6. — Pile dwellings on Lake Maracaibo.

houses are built in rows much as they would be if on the land. The inhabitants make their calls and transact their business in canoes instead of in cars and cabs. This town is about three miles from the shore.

While life in these dwellings so far from the shore has its disadvantages in many ways, it has some advantages. These people depend to some considerable extent upon the fishing industry, and this they can easily carry on. In the past, their position afforded them much protection against their enemies. In a warm and moist climate mosquitoes are sometimes a serious pest. They are much more numerous along the shore of a lake or a marsh than they are on the water some distance from the land.

Venezuela as a country is very little like the islands upon which Venice is situated. It has lofty mountains, extensive plains and dense forests. It is more than ten times as large as New York State, but has fewer inhabitants. It is the only republic in South America situated wholly north of the equator. It has an extensive coast line, and its many fine bays are a great advantage to commerce.

From Lake Maracaibo almost to the mouth of the Orinoco a tangle of mountains parallels the coast. These ranges are an extension of the Andean system. Although in the torrid zone, some of their peaks rise above the snow line, which is here about 13,500 feet

above the sea. South of these mountains is a vast prairie region called the *llanos*. Millions of cattle feed upon these grassy plains. Beyond the llanos are extensive forests, some of which have not yet been fully explored. In the southeast is another mountainous region separating Venezuela from Brazil.



FIG. 7. — View on the Orinoco River, Venezuela.

None of these mountains is permanently snow-covered, although some of the peaks are 8000 feet in altitude.

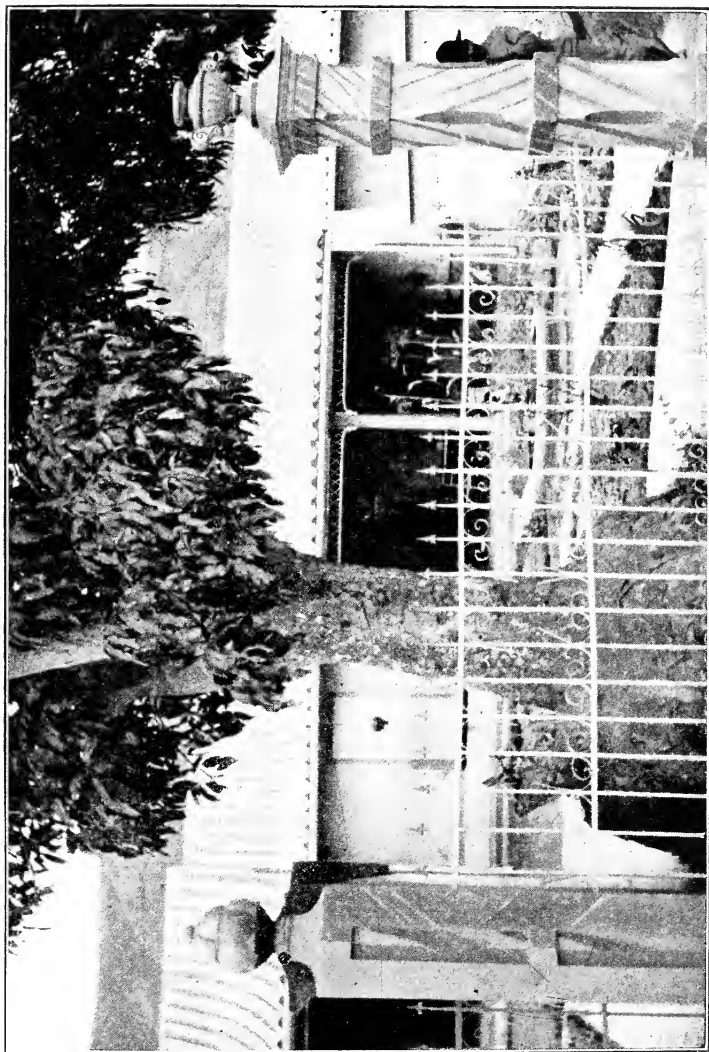
The Orinoco is one of the great rivers of the world. It is fed by countless streams, many of which have their sources in the Andes or in the mountains in the southeastern part. These tributaries bring to the Orinoco

an immense load of ground-up rock, most of which is deposited close to the mouth of the great stream. Thus, as the highlands wear down, the great delta of the Orinoco is constantly being extended seaward. Name other rivers that are building deltas.

For hundreds of miles from the sea the Orinoco is deep enough to float the largest ships. Because of this, the river is of great value commercially, although comparatively few steamboats are used. The chief city on the river is Ciudad Bolivar. This is the limit of navigation for the largest ships, but the river is navigable to a point less than 100 miles from Bogota in a straight line. Some of the exports and imports of eastern Colombia follow this route.

A most remarkable fact about the Orinoco is that it is connected with the Amazon. The Cassiquiare is the connecting link between the Rio Negro, a great tributary of the Amazon, and the Orinoco. A marshy region makes this connection possible. Indians and explorers sometimes travel in boats from one of these great river systems to the other, but this cannot be done in large ships. Sometime the Orinoco and the Amazon may be connected by means of a canal.

There are many lakes in Venezuela, the largest of which is Lake Maracaibo. This is a body of water about 150 miles long by 75 miles wide and having an area greater than that of Lake Ontario. Examine



*Photo by Mrs. William Moran.*

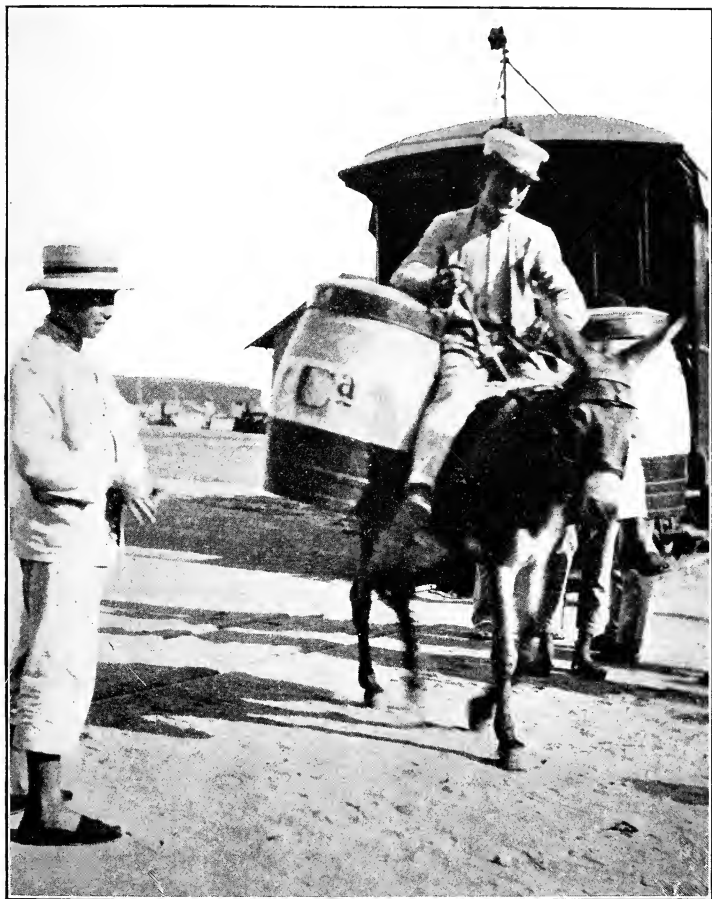
**Fig. 8.** — A house in Venezuela.

the map and you will see that it is really a great bay connected with the sea by several narrow channels. While the lake is deep, there are sand bars at the entrance to these channels. This makes it impossible for large ships to go in and out. On the west shore of the entrance to Lake Maracaibo stands the city of the same name, founded nearly 350 years ago.

Being in the torrid zone the lowlands of Venezuela are of course hot, but the highlands, according to their altitude, are cool or even cold. In fact, all of the zones are represented. In most parts of Venezuela there are but two seasons, the wet and the dry. The rainy season is in the summer, and the dry season in the winter. Owing to the latitude of Venezuela, summer and winter do not of course mean what they do in our country.

The products vary according to the climate. On the lowlands, where there is plenty of moisture, bananas, sugar, coffee, cocoa and coconuts are produced. On the higher lands corn, wheat, beans and other crops of the temperate zone flourish. In the forests south of the llanos, rubber, dye woods, vanilla and other useful products are found.

Venezuela has considerable mineral wealth. Much gold exists in the southeastern part of the country. Copper, iron, coal and salt are also known to exist. The fact that iron and coal have not yet been mined



*Photo by Mrs. William Moran.*

FIG. 9. — Water carrier, La Guaira.

extensively is one reason why so little manufacturing is carried on.

La Guaira, the chief port, is a very old city, founded in 1558. It is situated at the base of a mountain which rises very abruptly to a height of more than 8000 feet. The name of this mountain is La Silla, which in Spanish means *the saddle*. It is so named because of its form. The temperature at La Guaira is higher than it would be were it not for the heat reflected from the almost perpendicular mountain side. The space between the mountain and the sea is very narrow, and the city practically consists of a number of parts connected by a single street along the ocean front.

If a tunnel some six or seven miles in length were cut through La Silla, it would connect La Guaira with Caracas, the capital and largest city of Venezuela. One of the most wonderful railroads in the world connects the two cities, but its length is about twenty-two miles. It zigzags along the mountain side, climbing to an altitude of 3200 feet, and then dropping more than 1000 feet to the capital city.

Caracas lies in a beautiful valley surrounded by mountains. The valley, which is about twelve miles in length by four in width, is watered by the river Guira. Round about the city are sugar and coffee plantations. Owing to the altitude, the temperature





*Photo by Mrs. William Moran.*

FIG. 10. — Railroad and wagon road from La Guaira to Caracas, Venezuela.

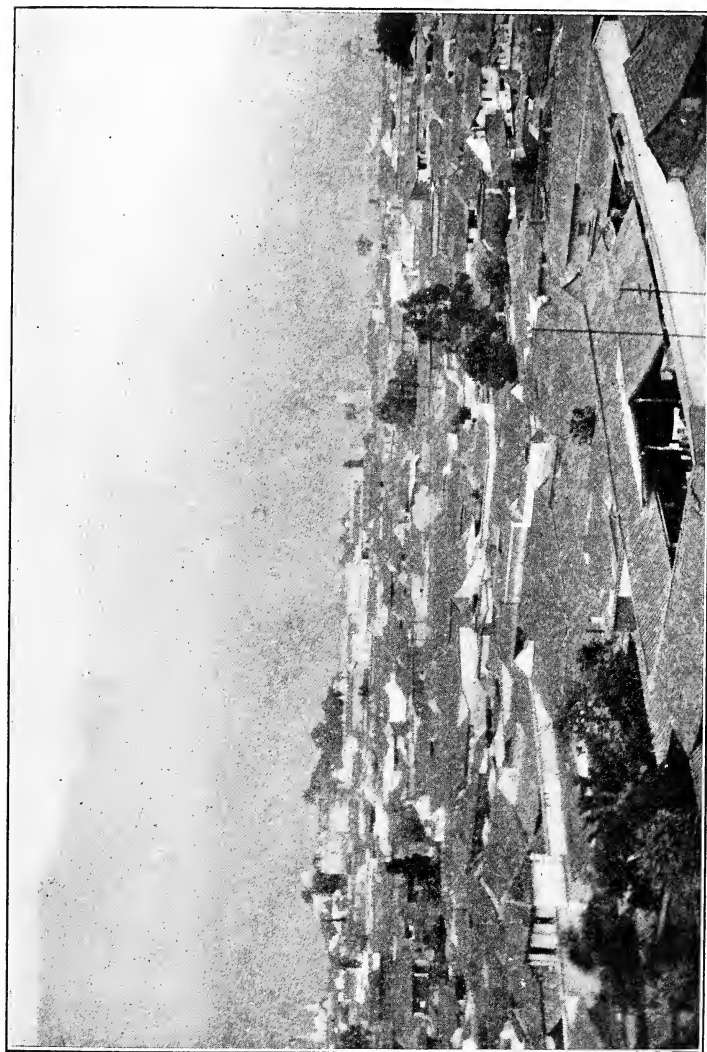
is more moderate than it otherwise would be, averaging about 70° F. What is the average temperature where you live?

In 1812 a terrible earthquake practically destroyed Caracas. As earthquakes are frequent, the houses are low. They are usually built of stone or plaster and are very commonly painted yellow or blue. The roofs are generally of red tile. Here, as elsewhere, the Spanish people often build their houses on three sides of a court called a *patio*. This is invisible from the street, and affords a most delightful place for family and other gatherings. During pleasant weather the meals are often served here. Palms and other ornamental trees, as well as fragrant flowers, abound, and usually there is a fountain of sparkling water.

As there is little need of fire for warmth, there are few stoves in the city, and therefore few chimneys. The houses are very much alike in architecture. The residence of the president of Venezuela is known as the "Yellow House" instead of the "White House."

Venezuela was the first of the South American countries to declare her independence. A document corresponding to our Declaration of Independence was signed on July 5, 1811. Not until 1831, however, did the people gain their independence.

Not far west of La Guaira is Puerto Cabello. This city is practically at sea level, and is therefore very hot.



*Photo by Mrs. William Moran.*

**FIG. 11.**—A view of Caracas.

It is connected by rail with Valencia, a city about fifty miles inland. Similarly, Tucacas is connected with Barquisimeto. This latter city receives the products of the back country by means of pack animals.

Maracaibo, one of the most important ports, is at the southern end of the neck of water that connects the Gulf of Venezuela with Lake Maracaibo. The town was founded in 1571, but was twice destroyed by the Indians. It is built in the form of a crescent of several miles in extent. The older houses are built in the Spanish style, having a court or patio. The bright-colored buildings, with their red tile roofs, look very attractive as seen through the foliage of the tropical vegetation.

As already pointed out, Ciudad Bolivar, named for the patriot Bolivar, is a city of considerable commercial importance. It is situated on a bluff overlooking the Orinoco and is well above high water. Considerable gold is exported, and many cigars are manufactured. The population is about 15,000.

Industry and commerce in Venezuela are hindered by lack of railroads as well as by the character of the people. There is no thrifty middle class. The people are either rich or poor. The exports are chiefly raw products. The most important are cattle, hides, coffee, cocoa. The chief imports are manufactured articles. Considerable trade is carried on with the

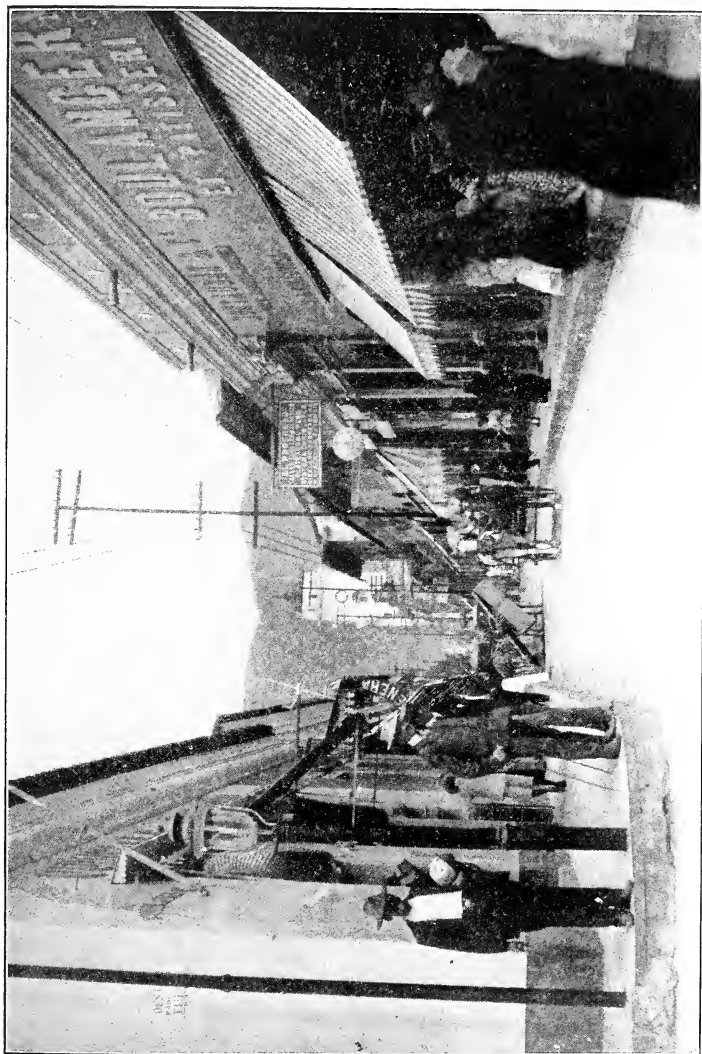


FIG. 12. — Street scene in Caracas. Photo by Hiram Bingham.

*Courtesy of Yale University.*

United States. This is in part due to the proximity of the two countries.

There is a large Indian population in Venezuela, and therefore there are many people who can neither read nor write. In the past the people have been very unsettled politically, and there have been many revolutions; but conditions have improved greatly in recent years. The people are characterized by their hospitality and politeness, as well as by their love of music and the drama.



*Photo by Mrs. William Moran.*

FIG. 13. — Statue of Bolivar, Caracas, Venezuela.

## CHAPTER III

### THE GUIANAS

#### *British Guiana*

THERE are but three colonies on the continent of South America, and the largest of these belongs to Great Britain. British Guiana is larger than England, but as most of the country is a jungle, the population is very sparse, averaging under five to the square mile. The Dutch, who formerly controlled the region, reclaimed some of the flat land along the coast, and this is still the most thickly settled part.

Inland from the low coastal plain there is a plateau of sandstone, and still farther to the south there are mountains. Where the rivers flow from the plateau to the softer rocks of the plain, rapids and falls have developed. Where in the United States are there falls caused in this way? These falls obstruct navigation.

On the Potoro River, which is a tributary of the Essiquibo, is one of the most wonderful falls of the world, known as the Kaieteur. If these falls were in our country or in Europe, they would be visited by



thousands of people yearly. Very few white people have seen them, for they are far from towns or even roads. A great sheet of water drops over the rocks a distance of 741 feet, or about five times as far as the water falls at Niagara. The movement of the falls upstream has left a wonderful gorge. You remember that below the Niagara Falls there is a gorge several miles long.

The climate is hot, and the temperature varies but little from one part of the year to another. On the lowlands near the coast the yearly rainfall averages 100 inches or more, and on the hills and mountains it is heavier than this. These conditions cause a luxuriant growth of vegetation. Unless man prevents, the jungle, when cleared away, is very quickly replaced by nature.

In the forests bright-colored parrots and toucans chatter noisily. The eagle, the white heron, the ibis, the egret and a host of other birds are common. The great snake called the anaconda may sometimes be seen, and alligators make their homes in the streams.

Georgetown, the capital, is at the mouth of the Demerara River. The city is built upon land so low that a great wall about a mile in length has been constructed to keep out the sea. On the seaward side of the wall is a strip of white sand thrown up by the waves, while on the other there are palm trees, shrubs

and flowers. In the evening the people congregate upon this wall where they can enjoy the cool sea-breeze.

The city, which has a population of some 60,000, carries on a considerable trade, and is the chief port of the country. Its most important export is sugar, but rice, gold and diamonds are exported to some extent.

### *Dutch Guiana*

This colony is about three times as large as the mother country, although its total population is less than 100,000. The country, which is sometimes called Surinam, is much like British Guiana in surface, climate and products.

Owing to the abundant rainfall there are numerous rivers, but on account of rapids they are not navigable far into the interior. In spite of this they are the chief lines of communication, for roads are very few. The rivers also serve as boundaries, the Corentyne separating the country from British Guiana, and the Maroni separating it from French Guiana.

As we travel up the river Surinam we see the substantial houses of the Dutch farmers with their gable roofs and dormer windows. We see plantations where sugar, rice, coffee, cocoa and bananas are produced. About fourteen miles from the mouth of the river we come to Paramaribo, the capital.

Ages ago, where Paramaribo now stands, the waters of the sea covered a reef of shells. These shells, mixed with earth, are used in paving the streets. The most attractive of the streets of the capital is called "Herrenstraat." It is a broad highway, and is lined with mahogany trees, which are very valuable.

As slavery once existed in this country we see many colored people. They live in huts with thatched roofs. Japanese, Chinese and Hindus are also numerous.

An interesting fact regarding Dutch Guiana is that in 1667 the people of Holland accepted it from Great Britain in exchange for New York, which had previous to this time been in the possession of the Dutch and was called by them New Amsterdam.

### *French Guiana*

The French colony, sometimes called Cayenne, is the smallest of the three, being about as large as Maine. Its population averages about one to the square mile, for like the other Guianas there is much jungle land. As in the other colonies, the rivers have rapids.

Gold is the chief product of French Guiana. Sugar, coffee, cocoa and other tropical crops are produced to some extent. Some Cayenne pepper is produced, and this, it is said, gave the chief city its name. The French send many convicts to Guiana.

## CHAPTER IV

### THE UNITED STATES OF BRAZIL

BRAZIL is a land of summer, for it is in the torrid zone, and it has no very lofty mountains. Although it has been 400 years since Europeans first settled in the country, it still has vast stretches of gloomy forests uninhabited except by Indians. Practically the only paths through these forests are the streams, for, unless it is frequently cut, trails and roads are quickly taken possession of by the rapidly growing vegetation.

Traveling upon one of these narrow lanes of water overhung by forest trees, we get a good idea of nature in the wet portions of the tropics. Here a great scaly-backed alligator, almost the color of the log upon which he is lying, drops into the water at our approach. There a troop of monkeys are swinging from one tree to another. Occasionally a great snake is seen, while parrots, toucans, humming birds and brilliant moths and butterflies are common.

But not all of Brazil is a wilderness. It produces a large part of the world's supply of coffee and rubber, while sugar, cocoa, cotton, nuts, cabinet and dye

woods, gold and diamonds are other products of importance.

It is hard to realize that Brazil is about as large as Europe or the United States, yet this is true. Its



*Courtesy of Lamport and Holt Line.*

FIG. 14. — Gathering dyewood, Santos.

area is equal to nearly one half that of the continent of South America. Yet the population of Brazil is only one fourth as great as that of the United States. Give a reason for this.

Brazil extends about eight degrees north of the equator, and thirty-three degrees south of it. The

latitude of Rio Grande do Sul, on the southeast, corresponds to that of Charleston, South Carolina, although the cities are in different hemispheres. All but two of the countries of South America border on Brazil, and she has a great extent of coast line. This gives her a commercial advantage. North of Cape San Roque a coral reef fringes the coast. There are comparatively few openings in this reef, and therefore the best harbors are south of Cape San Roque.

A large part of Brazil is a wooded plain drained by the Amazon and its tributaries. Mountains parallel the southeastern coast. In the neighborhood of Rio Janeiro they are called the Organ Mountains, while farther south they are known as the Serra do Mar. There are many other systems, but everywhere they form a wall of dense forests as well as of rock, and so hinder the building of roads into the interior. Beyond the mountains is an extensive plateau varying from 1000 to 4000 feet in altitude.

Brazil is in the belt of northeast and southeast trade winds. As the southeast trades come in contact with the mountains along the coast, their moisture is condensed, and an abundance of rain falls. This occurs at all times of the year. West of the mountains the year is divided into a wet and a dry season. South of the equator the wet season begins in September which, in that part of the world, is spring. The change

of seasons is due to the north and south shifting of the wind belts as the earth revolves about the sun. On the Brazilian Highlands the annual rainfall amounts, in some places, to more than 100 inches per year.

You know that when Europeans came to North America they settled on the Atlantic Coastal Plain, and for 300 years most of the people remained east of the mountains. In Brazil this was not the case. The coastal plain is very narrow, varying from five to thirty-five miles in width, and is not adapted to the staple crop of the country, coffee. Accordingly the great plantations, or *fazendas*, as they are called, are located on the lower slopes of the mountains, in the mountain valleys and on the eastern part of the plateau. The plantations and towns are therefore connected with the coast by short lines of railroad. At the coastal ends of these lines we find seaports. Very recently these short lines of railroad have been connected so that it is possible to journey by train from Rio Janeiro to Montevideo, a distance of about 2000 miles.

The map shows you that a large river, the Sao Francisco, enters the Atlantic about halfway between Pernambuco and Bahia. It would seem as though this river would afford an easy roadway into Brazil. But navigation is interrupted by rapids and falls, and ships can ascend but a short distance. You observe that there is no important city on the river or at its

mouth, and this indicates that it is of little commercial importance. About 150 miles from the mouth of the river are the very beautiful falls of Paolo Affonso.

There is considerable mineral wealth in Brazil, but mining is not at the present time an industry of great importance. Gold, diamonds and iron are produced in considerable quantities, and there are deposits of silver, lead, platinum, mercury, copper and coal. The diamonds are produced in the region near the source of the Sao Francisco, and it is nearly 200 years since diamonds were first found there. One of the most noted diamonds ever found there is known as the *Southern Star*. Worth a large sum of money, it was found by a negress who was washing clothes in a stream.

Although one can go from Montevideo to Rio Janeiro by rail, a trip by steamer is more enjoyable. Traveling by water one escapes the heat of the land and also the red dust that works its way into the cars. Let us take a trip on one of the many steamers engaged in the coast trade of Brazil. The trip will be a slow one, for the ship will stop at many ports. In this way we shall learn much of the geography of the country.

We begin our trip at Rio Grande do Sul, nearly 700 miles south of Rio Janeiro. The city is near the entrance of a large lagoon called Lake Patos. A bar of sand, which greatly obstructs navigation, separates



the lake from the ocean. In 1907 the government decided to open a channel thirty-two feet in depth across the bar, and an engineer from the United States was awarded the contract.

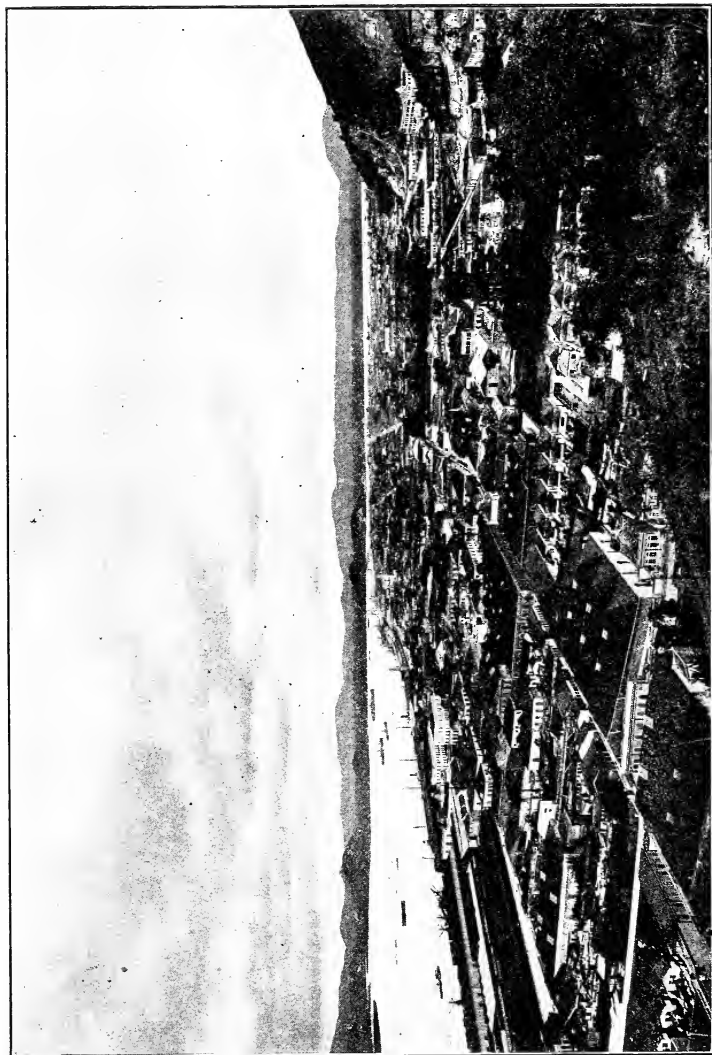
In the region tributary to Rio Grande do Sul many cattle are raised and a large number of hides are placed aboard our ship.

Porto Alegre, at the head of the lake, is a much larger city than is Rio Grande do Sul. Hides are exported in great numbers.

At Santos, which is the port of Sao Paulo, coffee is king. More coffee is shipped from this little city than from any other city in the world. Santos is situated upon low, flat land and has a hot and moist climate. The newer streets are well paved, straight, wide and well lighted and the wharves are first class, for the importance of the coffee industry has led to harbor improvements.

And now we approach the harbor of Rio de Janeiro, one of the most beautiful in the world. On the south side of the entrance rises a sharp peak to an altitude of about 1500 feet. Because of its form this is called Sugar Loaf Mountain. Beyond this we see still higher mountains, covered with vegetation to their summits, for there is plenty of rainfall here.

The passage leading into the bay is only about one mile in width. The water is deep enough to admit



*Courtesy of Pan American Union.*

FIG. 15. — View of Santos, Brazil.

the largest ships, a fact of great importance to the city. As we steam through the channel, the bay, which is about fifteen miles long and from two to seven miles wide, opens up before us. It contains some fifty square miles of deep water, from which rise a large number of wooded islands.

The city is situated upon a large peninsula that projects into the bay from the southwest. Rio Janeiro



*Courtesy of Pan American Union.*

FIG. 16. — View of Rio de Janeiro, Brazil.

has all of the improvements of a modern city. Across the main business district extends the Avenida Central, 100 feet in width. Facing this street are many of the most substantial and beautiful buildings. Another noted street is Ouvidor. This is in an important shopping district, but it is so narrow that during

certain hours of the day no vehicles are allowed upon it.

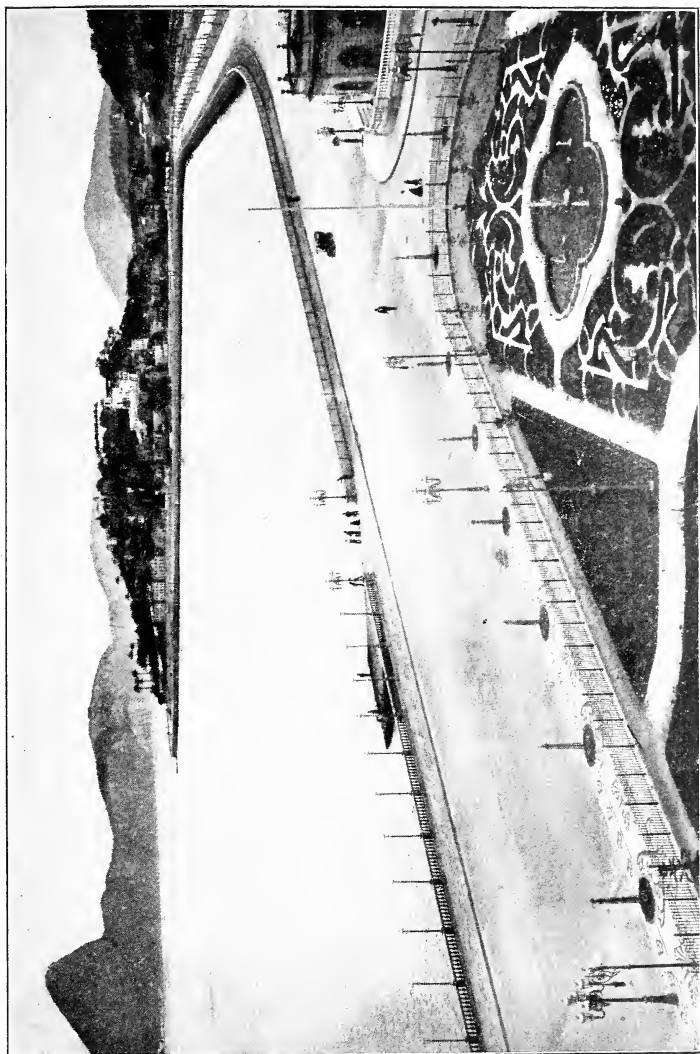
Rio Janeiro is the capital of Brazil, and it therefore corresponds to the city of Washington in our country.



*Courtesy of Lamport and Holt Ltn.*

FIG. 17. — Avenida Central, Rio de Janeiro.

It is the largest city in the republic, having a population of nearly 1,000,000. The capital is situated in a Federal District as is Washington, and was settled by a company of Frenchmen in 1555. A few years later they were driven out by the Portuguese.



*Courtesy of Lamport and Holt Line.*

FIG. 18. — Avenida Berra-Mar, Rio de Janeiro.

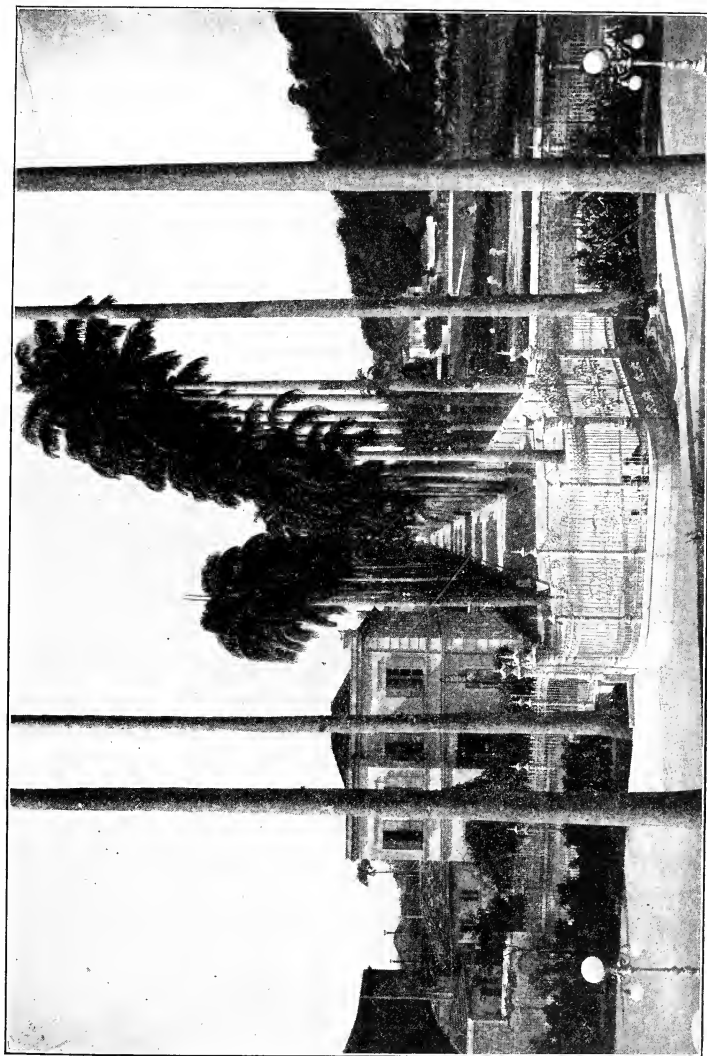
One of the high hills in the city is called Corcovado. From the summit, which can be reached by means of a scenic railway, a wonderful view is presented. The beautiful blue bay with its islands and many ships riding at anchor forms a picture long to be remembered.



*Courtesy of Lamport and Holt Line.*

FIG. 19. — Municipal Theater, Rio de Janeiro.

Along the water front are the wharves and a fine drive. The streets radiate from the end of the peninsula somewhat as do the spokes of a wheel. There are beautiful villas upon hillsides and in ravines, for the great increase in population has caused much expansion.



*Courtesy of Lamport and Holt Line.*

FIG. 20. — Palm-lined street, Rio de Janeiro.

The first important port north of Rio Janeiro is Bahia, situated on the Bay of All Saints. Close to the water the land is low and flat. A bluff about 150 feet in height leads to a terrace. Owing to the arrangement of the surface Bahia is divided into two parts as is Quebec. In the lower part of the city the



FIG. 21. — Lower city and bay, Bahia.

heavy business is done, while the chief residence district is on the terrace. The two parts of the city are connected by cable and elevator. Bahia is a large city, having a population of about 275,000. From it sugar, cotton, cocoa and tobacco are exported. In 1870 several orange trees were sent from Bahia to Washington, D.C. Later two of these trees were



sent to southern California. In this way the fruit known as the Washington navel orange was introduced into the state of California.

Soon after crossing the tenth parallel of south latitude our ship enters the harbor at Pernambuco, or as the residents call it, Recife. Recife means reef, and the city was given this name because there is a reef in front of the bay. As the entrance to the harbor is shallow, great ocean liners are obliged to anchor about a mile from the city. Goods and passengers are transferred to smaller boats. This is a great disadvantage, yet in spite of it Pernambuco has considerable commercial importance. The harbor is now being dredged to the depth of from 24 to 28 feet. It is expected that this work will be finished in 1914.

Brazil is an old country. The city from which we have just sailed, like several others in the republic, was founded before the beginning of Boston or New York. The country is said to have been discovered by the Portuguese in the year 1500. An expedition landed near where Bahia now stands, and named the country "Terra de Santa Cruz." This means the "Land of the Holy Cross." The first product of the land to reach Europe was a dyewood. From its resemblance to a dyewood called brazilwood, the country received its present name.

In the year 1822 the Brazilians declared themselves

independent of Portugal, and three years later the mother country recognized their independence. In 1889 the country became a republic, fashioning its government after that of our country. The president is elected for a term of four years, and after the expiration of this term, he cannot be immediately reëlected. Three senators are elected from each state. How many United States senators are elected in each of our states? •

Negro slavery existed in Brazil until 1811, and consequently there are many negroes in the country.

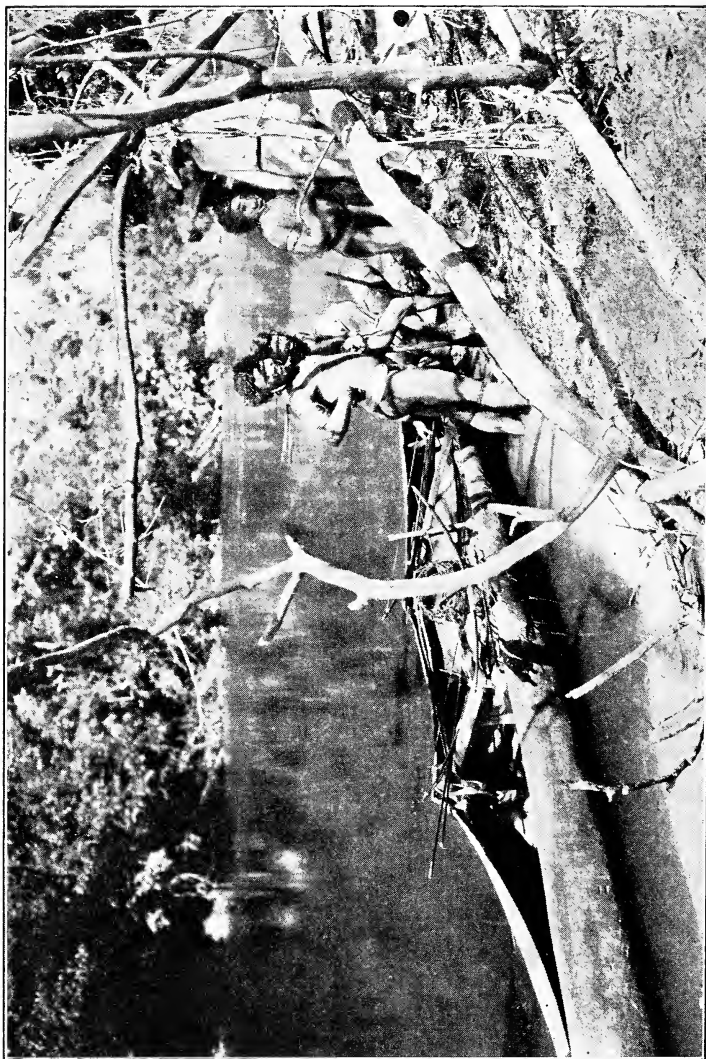
Brazil, though it has been settled for so long, is not visited by people from our country as is Europe. Give a reason for this. Within the last few years, however, much interest has been aroused in Brazil and other South American countries.

## CHAPTER V

### THE WORLD'S GREATEST RIVER

HAVE you ever thought as you have looked at a river how many streams contribute water to it? Each tributary entering the main stream has its branches, to these still smaller streams bring water, and so the subdivision goes on until we find the tiny rills that form the sources of most rivers. A river system is something like a tree, and, as you know, the terms *branch* and *trunk* are frequently used in speaking of rivers. In the case of the tree, the trunk supports the branches, while in the case of the river, it is the branches that support the trunk.

The Amazon is the greatest river on earth. It is more than 3,000 miles long, and it drains an area of more than 2,000,000 square miles. Some of its water comes from snows that lie 16,000 feet above the level of the sea. At its mouth the river is much wider than Lake Michigan in its widest part, and at Tabatinga, on the border of Peru, it is said to be one mile in width. The volume of water discharged by the Amazon is twice as great as that discharged by the Mississippi.



*Courtesy of "South America."*

FIG. 22.—The Amazon River.

This is in part because of heavy rainfall, for the basin of the Mississippi is more than half as large as that of the Amazon.

The plain drained by the Amazon is very low. During the last 500 miles of its course the river falls but five feet. Two thousand miles from the mouth of the river the altitude is but thirty-five feet. St. Louis, about 1000 miles from the Gulf of Mexico by water, has an altitude of 500 feet, while Minneapolis, 2000 miles from the river's mouth, is 800 feet above the level of the gulf. For hundreds of miles the Amazon does not flow as fast as a man can walk. You can understand, therefore, that the current of the river is not a serious obstacle to navigation.

Owing to this levelness of the land the Amazon has changed its course many times, and consequently there are numerous channels parallel to the main stream. The Indians call these "canoe paths," and when boatmen unfamiliar with the river get into these, they often find it difficult to get out again.

Although the Amazon is a mighty stream, it is not so subject to floods as are many of the rivers in the United States. This is in part because the rainy season does not occur in the northern and southern portions of the basin at the same time, and in part because the dense vegetation holds back the flood waters. During *our* summer the heaviest rains occur

north of the equator, while south of the equator the rainy season begins in September.

The Amazon River is very navigable. This is due to the great volume of the water and the flatness of the land. The main stream and its tributaries offer some 20,000 miles of navigable waters, a distance four fifths as great as the circumference of the earth at the equator. Small boats make use of the river to the foot of the Andes, and much of the trade of eastern Peru and Bolivia is carried on by means of several tributaries.

Vessels of considerable size ascend the Amazon to Iquitos, Peru, about 2000 miles from the mouth. Great ocean liners reach Manaos, 1000 miles from the sea. Here their cargoes must be placed upon smaller vessels, and this gives to Manaos considerable importance. This city is at the junction of the Rio Negro and the Amazon. As its position is similar to that of St. Louis, it is sometimes called the St. Louis of Brazil. What river empties into the Mississippi near St. Louis?

Manaos has a population of about 50,000. It has good streets, trolley lines, telephones, newspapers, banks, hotels, an ice plant and a library.

The largest tropical forest in the world is found in the Amazon basin. This makes travel and the settlement of the country difficult. Manaos is the only large city in the basin, and there are no railroads. Here

everything is carried by water, while in the southeastern part nearly everything is carried by rail. In years to come this part of Brazil will have a much larger population than it now has.

The products of the Amazon basin are many — cocoa, mandioco, sarsaparilla, rice, nutmegs, black



*Photo by Chester W. Brown.*

FIG. 23. — A rubber camp.

pepper, Tonka beans, ginger, arrowroot, Brazil nuts, cabinet and dye woods and rubber. By far the most important of these is rubber. The use of this commodity is steadily increasing, automobiles alone calling for an immense amount.

Brazil produces more than half of the world's supply of rubber. The men who work in the forests are



*U. S. Dept. of Agriculture, Bureau of Plant Industries, Bulletin 49.*

FIG. 24. — Tapping a rubber tree.



Indians. They live in huts which are built of light poles and have thatched roofs. Often they live in settlements or camps over which there is a superintendent, but considerable rubber is produced by individuals who carry it in canoes to the nearest camp, where they sell it.



*Photo by Chester W. Brown.*

FIG. 25. — Making a ham.

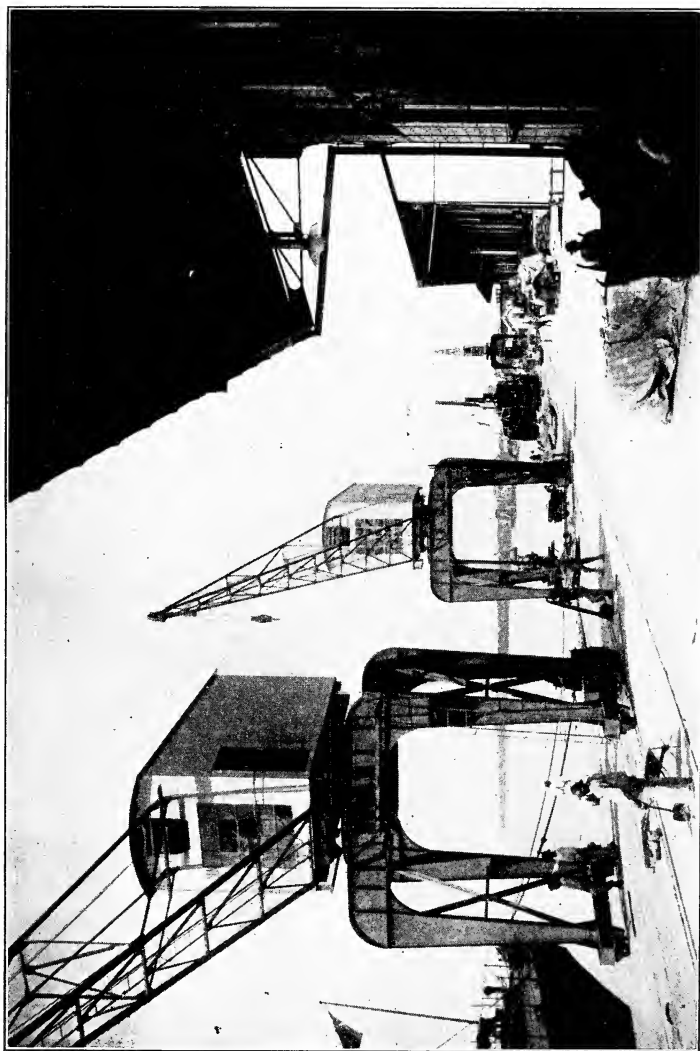
Rubber is chiefly obtained from the rubber tree. There are several varieties of this tree, the one most commonly used in Brazil sometimes growing to be eight or ten feet in diameter at the base. The tree is tapped with a knife or a hatchet, and a liquid somewhat resembling milk oozes slowly out. Just below the cuts are fastened cups in which the sap is collected.

Tapping the trees and collecting the sap is tedious work, for often the workmen have to wade in water. Once a day the trees are visited and the contents of



FIG. 26. — Crude rubber ready for shipment.

the cups are emptied into a large gourd. This is carried to the camp, where the liquid is hardened while exposed to the smoke of palm nuts. This crude rubber is



*Courtesy of Pan American Union.*

FIG. 27.— Para, Brazil. The platform between the quay wall and the warehouses at the Port of Para.

black in color, and in this form is often called *hams*. Rubber in this form is worth about one dollar per pound.

Down many of the tributaries of the Amazon, boat loads of hams are floated. Much the larger part of the rubber is exported from Para. The inhabitants of this city call it Belam. It is the capital of the state of Para, and it is only about one and one half degrees south of the equator and about 100 miles from the coast. The map shows you that the city is not located on the main channel of the Amazon. Although the city is so close to the equator and on low ground, the climate is tempered by the steady trade winds. The city is clean and beautiful. The buildings are chiefly of brick made near by. The streets are lined with mango and palm trees. The city owes its importance almost entirely to the exportation of rubber. An old proverb says: "Who comes to Para is glad to stay; who drinks *assai* goes never away."

## CHAPTER VI

### THE COFFEE INDUSTRY IN BRAZIL

IN one of the states of Brazil, Sao Paulo, more than one half of the world's supply of coffee is grown. The city of Sao Paulo, the capital of the state, is but a few hours' ride by rail from Rio Janeiro. It is situated on the slope of the Serra do Mar Mountains. The great coffee plantations, or *fazendas*, lie to the north and west of the city.

While the coffee tree grows only in the warm parts of the world, it does not thrive on the coastal plain of Brazil. An altitude of from 1800 to 2000 feet is required, and hence the coffee fields are at some distance from the coast. The tree needs a rich soil, good drainage and, when it is young, some shade. If not pruned down, the coffee tree of Brazil would grow to a height of from fifteen to eighteen feet. As this would make the picking of the coffee expensive, the trees are not permitted to reach a height of more than eight or nine feet.

The first step in establishing a coffee plantation is to clear off the forest. Sometimes the young plants are started in a nursery, and sometimes the seeds are

planted in the field. The trees are in rows about fourteen feet apart each way. In the space between the rows corn is sometimes grown while the trees are young. A full crop is not obtained until the trees are about six years old. The leaves of the coffee tree are dark green in color, and the blossoms are white and fragrant.

The coffee crop is gathered in the winter, that is, from May to September. This is the dry season, which is of course very favorable to the coffee harvest. Picking is done by hand, and men, women and children engage in the work. The inhabitants of the coffee country are, for the most part, Portuguese.

The fruit of the coffee tree is known as *coffee berries*. These berries, when ripe, are about the color of a cherry, but are somewhat smaller. The outside pulpy part incloses the seeds, or *beans*, as they are generally called. There are two beans in a berry, and they grow with their flat sides together.

Imagine yourself standing beside a coffee tree. With your left hand you grasp a branch, while with your right, you strip from it the berries, both ripe and unripe. Of course many leaves are pulled off at the same time. The berries you may place in a pail or basket, or drop upon a canvas which has been spread under the tree. Sometimes the pickers are paid by the day, and sometimes by the bag.



FIG. 28. — Picking coffee.

In order to remove the sticky pulp from the seeds, the berries may be placed in a cement tank filled with water, or in a small canal, where they are allowed to remain until the pulp has become quite soft. Being



*Photo by R. De C. Ward.*

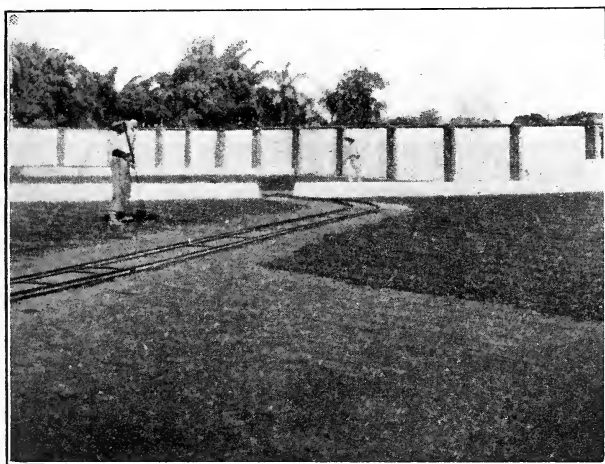
FIG. 29.—Fermentation basin for pulped coffee.

light, the unripe berries float, as do the leaves and twigs, and are therefore easily moved. In some cases the berries are carried by the canal to a pulping machine which removes the softened pulp.

The next process is the drying of the beans. This



is usually done out of doors, on areas floored with brick or tile. These drying floors are divided into sections which enable the workmen to keep the various sets of beans separate. During the process of drying the beans are carefully watched. Each evening they are raked up in piles so that they may not be injured



*Photo by R. De C. Wara.*

FIG. 30. — Drying coffee.

by the dew. The more careful planters protect the piles by means of pieces of canvas. During the day, the beans are stirred with a rake from time to time so that they will dry evenly. Several days are required to complete the process of drying.

Surrounding each bean there are two coats or membranes. These must be removed before the coffee is

ready for market. This is done in a hulling machine operated by oxen, horses or water power. Next, the hulls are separated from the beans, and the beans are sorted and sacked. On the larger plantations this work is all done by machinery. A sack of coffee contains 132 pounds.

If you were in the state of Sao Paulo during the time of the coffee harvest, you would see on every



*Photo by R. De C. Ward.*

FIG. 31. — Drying grounds.

wagon road loads of coffee drawn by oxen or horses. A cloud of fine red dust is raised by each wagon, for the best coffee soil is red in color, which is in part due to the iron that it contains.

The coffee is hauled by wagon to the nearest point on the railroad. The great development of the coffee industry, and the difficulty in keeping up wagon roads,

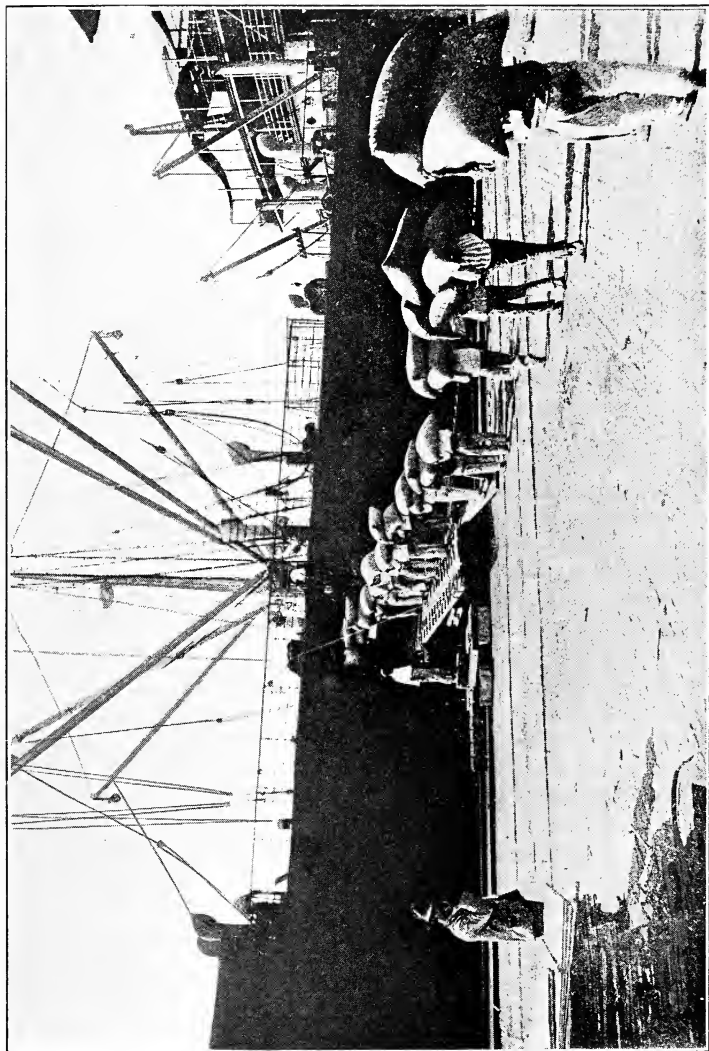


FIG. 32. — Loading coffee.

owing to the very rapid growth of vegetation and the sparse population, have made railroads a necessity. Santos is the port of the region, and it is now more important than Rio Janeiro as a coffee exporting center.

The coffee industry has led to great improvements in the harbor at Santos. Its wharves are busy places. One sees large numbers of workmen carrying the sacks of coffee aboard the ships which take it to many parts of the world. In a good year 8,000,000 to 10,000,000 sacks of coffee are exported from Santos alone. About how many pounds would this be? If each tree produced two pounds, how many trees would be required to produce this amount?

The coffee industry furnishes a good illustration of the countless ways in which the people of our country depend upon those in other parts of the world. We cannot grow coffee in the United States, and we therefore depend upon the people in far-away Brazil, Mexico, Central America and some other tropical countries for this commodity. They in turn purchase from us various kinds of manufactured articles.

## CHAPTER VII

### ARGENTINE REPUBLIC

ARGENTINA is quite different from Brazil, for it is largely a prairie plain. It is much like our own western plains, and it is a great agricultural country. Enormous quantities of wheat and corn are grown on immense farms called *estancias*. Occasionally crops are badly damaged by swarms of locusts that devour practically all of the vegetation. These insects are such a pest that the government has appointed inspectors whose duty it is to see that they are destroyed.

The northern part of the country is within the tropics, but the southern part of Argentina is as far from the equator as is the southern part of Sweden. There are, therefore, great differences between the climate of the northern and that of the southern parts. As Argentine Republic is not a great mineral-producing land, it was neglected in the early days, and it was not until its great possibilities as an agricultural country became known that it began to advance rapidly.

The area of Argentina is a little more than one third that of the United States, but it has a scant population.

Practically all of the people live in the cities or on the ranches. In our country there are almost countless villages, but in Argentina this is not the case.

As has been said, a large part of the country is a prairie, to which the name of *pampas* is given. It is, in its natural state, a great pasture land. It is located in the central part of the republic, and stretches from the foothills of the Andes, where the altitude is about 2200 feet, to the Atlantic. Except along the courses of the streams this vast area is practically treeless. The annual decay of vegetation has produced a fertile soil.

Between Argentina and Chile is the great mountain wall formed by the Andes. Central and southern Argentina are in the west wind belt, and therefore the rainfall is not heavy. Except in the far south, these lands are well adapted to stock raising, and millions of cattle, sheep and horses are pastured here. These animals are looked after by cowboys, called *guanchos*, whose life is similar to that of the cowboys in the United States. They wear sombreros, bright-colored *ponchos*, wide trousers and tight boots. The *poncho* is practically a blanket, and is very commonly worn in the form of a robe-like garment.

The better watered part of the plain, that is, the north-central part, is the great agricultural section of Argentine Republic. Here corn, wheat, rye, flax and alfalfa are grown in immense quantities. The greatest



*Courtesy of Pan American Union.*

FIG. 33. — Drying hides, Argentina.

acreage is in wheat, and Argentina is one of the first countries of the world in the production of both wheat and corn. As the population is so sparse, a very large part of the total crop is exported. About three



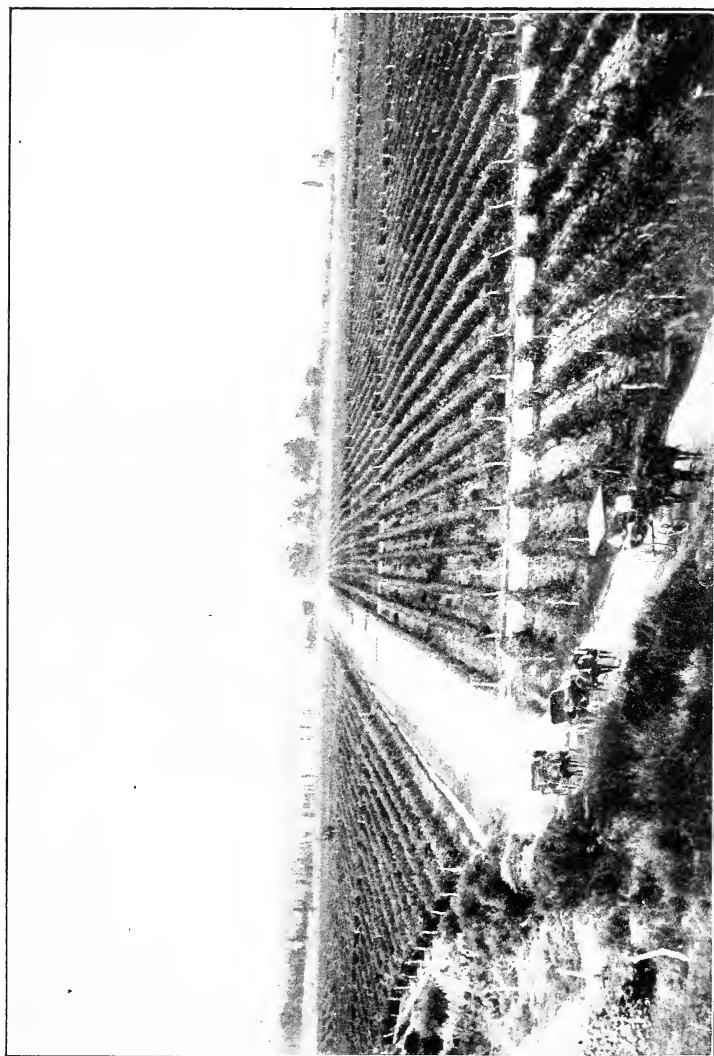
*Courtesy of Pan American Union.*

FIG. 34. — Fifty harvesting machines, Argentina.

fourths of the annual yield of wheat is sent to European countries.

In this new country the ranches are vast in extent. It is quite common to find ranches containing from 1000 to 6000 acres each. If a ranch consisting of 5760 acres were square, it would measure three miles on each side. Some of the farm machinery used on these ranches is manufactured in Chicago.





*Courtesy of Pan American Union.*

FIG. 35. — Vineyard in Mendoza, Argentina.

The map will show you that the tropic of Capricorn passes across the northern part of Argentine Republic. Here the temperature is high and the rainfall is abundant. As a result we find tropical forests. Where the land is cultivated, sugar, cotton and oranges are produced.

In the extreme southern part of Argentina it is very cold in winter, for this part of the country is as far from the equator as is Winnipeg, Canada. Here neither agriculture nor stock raising is important. The region is often called Patagonia, but there is no political division having this name.

It is generally said that the La Plata is the great river of Argentine Republic. This really is not a river at all, but is an estuary into which flow the Parana, the Uruguay and some smaller streams. In its widest part this estuary is more than 100 miles across, but it rapidly narrows as it penetrates the land. A territory about four times as large as Germany drains into this body of water.

The Parana is of great value to Argentina. It has twelve feet of water to Corrientes, which is practically at the point where the Paraguay enters it. It is navigable for some distance east of this, and it therefore is of commercial value to Paraguay as well as to Argentina. Vessels of considerable size ascend the Paraguay River to Asuncion. The Uruguay also is navigable,

and as for some distance it forms the eastern boundary of Argentina, it has a commercial value to this country.

Some of the animals of Argentine Republic are familiar to us and some are not. Among the familiar ones are the deer, the fox, the raccoon, the opossum, the wildcat and the prairie dog. Those that are not found wild in the United States are the monkey, the ant-eater, the tapir and many smaller animals.

Although there is considerable mineral wealth in Argentina, mining has not been extensively developed. There is some gold, silver, copper, lead and salt. Neither coal nor iron is as yet produced in large quantities. If these resources are not developed in years to come, Argentina is not likely to become a manufacturing nation on a large scale. The great manufacturing nations of the world are the ones that have and are developing immense deposits of coal and iron. Name these countries.

As most of the country is so level and free from forests, there is not the difficulty in constructing and maintaining roads that is experienced in Brazil. The map shows you that the north-central part of the country is well supplied with railroads. This is the part that is the most productive. According to the map, what is the great railroad center? Explain this.

The capital and most important city of Argentina is Buenos Aires, situated on the south shore of the

estuary of the La Plata. The geography of this great city is discussed in the next chapter. Considering her great extent of coast line, Argentina has few ports. This is because so much of the most productive part of the country is tributary to the La Plata.

Some forty miles from Buenos Aires is the city of La Plata. Here there are good docking facilities. Wheat, corn, meat and hides are exported. The population is about 80,000.

At the head of the bay of Bahia Blanca is the city of the same name. Here there is a deep and a well-protected harbor. The city is small, but is growing rapidly. Rosario, Parana and Santa Fé are the chief river ports of Argentina. Rosario is the second to Buenos Aires in population.

Tucuman in the northwestern part of the country owes its importance to the large sugar estates in the region and to the mineral deposits west of it. Mendoza is also in a mineral-producing section. Much fruit is raised in the vicinity. Founded in 1535, it is an old city.

There is now direct railroad communication between Valparaiso, Chile and Buenos Aires. This road is known as the Transandine Railroad. It crosses the Andes at a very great altitude, and there are many snowsheds to keep the track from being blocked by snow. At the Uspallata Pass, on the boundary between Argentina and Chile, is a bronze figure of the Christ,

erected to commemorate the treaty of peace entered into by these countries. On a tablet is this inscription :

“Sooner shall these mountains crumble to dust than the people of Argentina and Chile break the peace to which they have pledged themselves at the feet of Christ the Redeemer.”



*Courtesy of Lamport and Holt Line.*

FIG. 36. — Christ of the Andes.

Argentina is developing very rapidly. Its climate is favorable to settlement by white people. Its surface favors agriculture on a large scale. It is comparatively easy to construct railroads. There are navigable rivers, and land is cheap. All of these conditions attract large numbers of Europeans.

During recent years about 250,000 immigrants have landed in Argentina yearly. Practically all of them land in Buenos Aires. Where do most of the immigrants who come to our country land? The people who pour into Argentina come chiefly from three countries, — Italy, Spain and France.

Much foreign capital is invested in Argentine Republic. This comes largely from Great Britain, France and Germany. Argentina was settled just about 100 years before a settlement was made at New York, and it became a republic in 1824.

## CHAPTER VIII

### THE METROPOLIS OF THE SOUTHERN HEMISPHERE

AN ocean voyage of 6000 miles from the largest city on our continent would bring us to the metropolis of South America — Buenos Aires. This trip would require more than three weeks. Buenos Aires is not much farther from Liverpool than it is from New York. It lies almost exactly south of the eastern extremity of Nova Scotia. A line drawn east and west through Buenos Aires would reach the Cape of Good Hope in the southern extremity of Africa and the city of Sydney in Australia. Situated upon the wide mouth of the river Rio de la Plata, and being the shipping and trading point for one of the most productive regions of the South American continent, Buenos Aires is one of the most important cities in the world.

The river Plata, at its mouth, is more than 100 miles in width. This wide estuary becomes narrower as it enters the land. At Buenos Aires it is 30 miles wide. The city is built on the south bank of the river. It is the capital of the Argentine Republic. Its popu-

lation is more than a million and a quarter, or more than that of Cleveland, Cincinnati and Columbus combined.

Buenos Aires is the largest Spanish city in the world. It has more people than any other city in the Southern Hemisphere. The next largest city in South America is Rio de Janeiro — the largest Portuguese city in the world. Does it not seem strange that the largest Spanish city should be situated so far from Spain? Compare the size of Buenos Aires with that of the large cities in Spain. What cities in the Southern Hemisphere can be compared to Buenos Aires in size and importance?

Of every five people in the republic of Argentina one is in its capital city. Just as Washington is the Federal city of the United States and the City of Mexico the Federal city of that country, so Buenos Aires is the Federal city of Argentina. The city and territory surrounding it comprise a *Federal District*. This district, or state and city of Buenos Aires, is the most wealthy and populous of all the states of the republic. It covers 70 square miles and contains nearly half the population of Argentina.

This city, which has made such a wonderful growth as to draw the attention of all the world, is very old. It was founded in the year 1535. Some years before this, Pedro Mendoza, a Spaniard, was commissioned by his king, Charles V, to visit South America. After



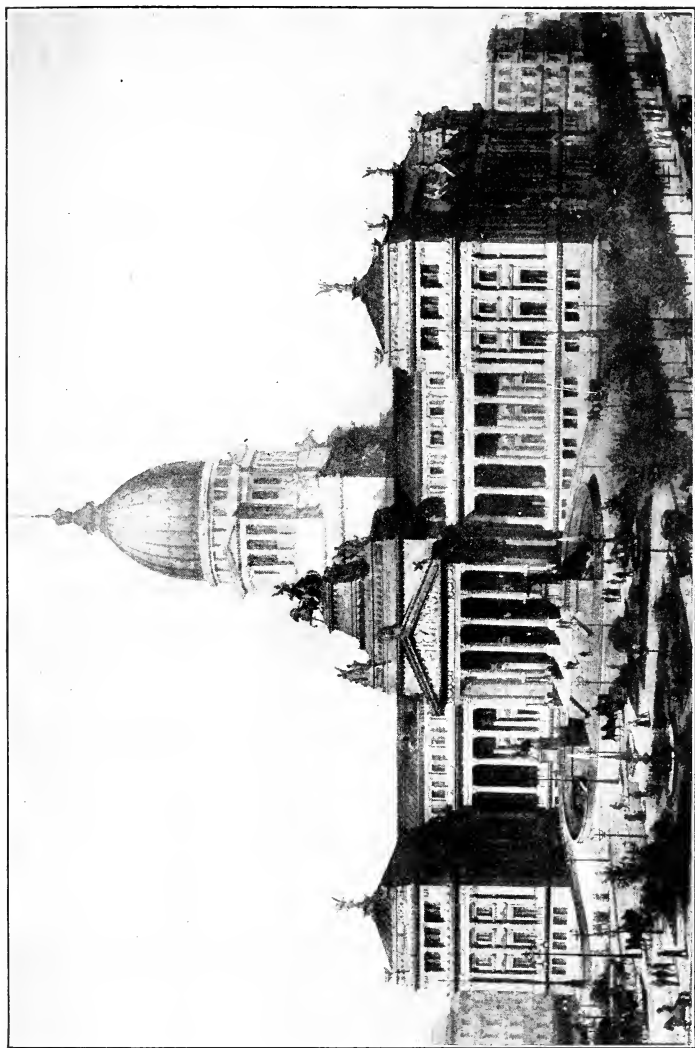


FIG. 37. — The capitol of Buenos Aires. From the architect's drawing.

*Courtesy of Pan American Union.*

giving the name Buenos Aires, which means "City of Good Airs," to the town, Mendoza held it in the name of Spain. It was soon captured and burned, however, by the Indians. But the city soon again came into the possession of the Spanish. The English captured it in 1806 but held it only a short time. It was then ruled by the Spanish viceroys until May 25, 1810. On that date the Argentinos achieved their independence. Their independence was not recognized, however, for some years.

To-day Buenos Aires is easily reached by water from America or Europe. For nearly 300 years after the founding of the city, all trade with Spain was carried on by way of Panama. Spanish vessels engaged in commerce, and all travelers came first to Panama. They then traveled to Lima on the coast of Peru, and thence across that country to Potosi. This carried the travelers through the rich silver-producing area around Potosi. Even then it was a long and tedious journey to Buenos Aires, which was reached by way of the Salado River and thence down the Parana River.

If you were to go by boat down the Atlantic coast to Buenos Aires, or should cross the continent from Valparaiso on the west, you would be astonished as you entered the city. Everywhere you would find hurry and bustle as in New York or Chicago or San Francisco. The wharves and docks are crowded with

freight and passengers. The harbor is full of vessels, large and small, from many nations. Goods from all parts of the world are being carried to warehouses and wholesale stores. Upon the docks are piled boxes and bales of goods that are to be sent from Buenos



*Courtesy of Pan American Union.*

FIG. 38. — Docks and elevators, Buenos Aires.

Aires to foreign countries. Trucks and heavy drays, *stevedores* and messengers are rushing back and forth. Everywhere you see evidences of great activity.

At one time the harbor was shallow and only small boats, or *lighters*, could reach the docks. Large steamers

were forced to remain far out in the stream. But later the waters of the harbor were dredged and deepened. Improvements of the most modern type were put in. These, for the most part, belong to the city. Now ocean-going steamers and sailing vessels, drawing not more than 27 feet of water, are enabled to tie up at the city wharves. These improvements have cost many millions of dollars.

Along the water front can be seen vessels from all parts of the world. Grain elevators are scattered here and there. Loading and unloading of heavy freight is done by *cranes*, moved by electric power.

The city is also a great railroad terminus. These railways extend to the cities and towns and into the rich agricultural and cattle-raising regions. They have been built and are owned by the English. More than one half the total investment the English people have in Argentina has been put into railroads. Trains are constantly arriving in Buenos Aires from all parts of the republic carrying cattle, sheep, horses, mules, hides, tallow, wheat, corn, flax, oats and other products. These are exported to the United States, Great Britain, Germany, France and other European countries. Buenos Aires is the largest wool and hide market in the world.

Some of the business streets are narrow. On a few of them vehicles are allowed to travel in one direction

only. They are well paved and lighted by electricity. Some of the residence streets are very beautiful. The most magnificent boulevard is the Avenida 25 de Mayo. This street received its name in honor of Independence Day, which is the 25th day of May. This boulevard is one of the finest in the world. It is wide and bordered with sycamore trees.

There are parks and plazas in plenty. Of the nine public parks, the largest is the Palermo, or Third of February Park. This lies along the river Plata, and here there are fine drives and a race course. On Sunday afternoons rich and poor alike delight to gather here and watch the carriages and automobiles as they dash back and forth or take part in the races. Order is preserved, where necessary, by mounted and armed *Gendarmes*. The people of Buenos Aires are called *Portenos*, and they are exceedingly fond of sport.

Along the shores of the river and bordering the parks, are as fine residences as could be found in our large cities. The business blocks are modern. They are not built high as in our cities. In the stores and even in the smaller shops can be purchased the finest goods, sent to Buenos Aires from every market in the world. On the Avenida are some of the large hotels of the city. The theaters are attractive and well attended. The most magnificent opera house in the Western Hemisphere is located here and is said to have cost

\$10,000,000. Large department stores, fine restaurants and imposing banking buildings are seen on every side. The latter are owned mostly by the English, Germans, French and Italians. Because of its attractiveness Buenos Aires is sometimes called the "Paris of South America."

There are several important newspapers published in the city. There are in all nearly 400, and eight of these are published in English. On the Avenida de Mayo the newspaper *La Prensa* is published. It is housed in a beautiful five-story building. This is the finest structure devoted to newspaper work in the world. The *La Prensa* is one of the world's great newspapers. It is printed in Spanish and has been issued for forty years. In this building, in addition to the best equipment of modern machinery, are offices and lecture rooms. There is a large audience hall, a library, reading rooms, baths, cafes, music rooms and apartments where visitors are entertained. There is a free dispensary for those who are too poor to pay for medical treatment. Any one in need of the services of a lawyer, and unable to hire one, may here have advice free of charge. In the building there are mural paintings by Italian masters and beautiful carvings by German and French artists. The paper has a circulation of 120,000.

The same telegraphic news that you read in your

paper to-day, appears also in the columns of *La Prensa*. The *Nación* is another important paper. Telegraph and telephone are in general use throughout the city. Sanitation is good and there are excellent water and sewer systems. These systems are owned by the municipality and cost a great sum. Electric cars and taxi-cabs offer quick transportation facilities. There are no elevated railways, but there is a subway. The government of the city is good.

The capitol or Federal building is located on the Avenida Mayo and some distance back from the street. It is a fine building and covers an entire block. The dome resembles that of the Capitol building at Washington. There are many fine effects in architecture throughout the city, as the government offers each year a prize for the most beautiful structure erected.

The only transcontinental railroad leading out of Buenos Aires is the Trans-Andean, built over the Andes to Valparaiso on the Pacific side of the continent. The distance is 888 miles. To Rio de Janeiro it is 1200 miles by water. To Montevideo it is 100 miles. The banks of the river Plata are low and the waters are dirty and rough at Buenos Aires. Splendid passenger and freight boats pass back and forth from Buenos Aires to Montevideo. Many people live in one of these cities and do business in the other, so steamers run each way every night, arriving at their destination

in the morning. Many of the well-to-do inhabitants go to the beaches and resorts that are located just outside of Montevideo.

The labor of the city is performed chiefly by Italians. Hundreds of thousands of immigrants are coming to Buenos Aires every year, among them many Italians. There are Spanish, Portuguese, French, Germans and English with a few Americans to be seen in the streets. While the English have had much of the trade, the Germans are fast gaining a foothold. In England the people speak of Buenos Aires as "B. A.," or "Aires," and think no more of a business trip to that far-away city than they would of coming to our country. Spanish is the language usually spoken, but, owing to its mixture with many other languages, it is poor Spanish.

The climate of the city is most agreeable. It is never very cold or very hot. It is similar to that of "Detroit in summer and Atlanta in winter." There is much rain, sometimes as much as five inches during a single storm. Prices are very high. The country has developed so rapidly that many people who were once poor are now extremely wealthy. These demand all the most costly things in food, in dress and luxuries and in manufactured articles that can be had anywhere. For this reason there are also many very poor people, and class distinctions are marked in Buenos Aires.



The educational advantages of the city are improving. The National University of La Plata is located here. There are normal and business schools and public institutions of elementary and high school grade. The agricultural schools are doing much to educate the young men in better and more improved methods of farming, dairying and stock raising.

From Buenos Aires there is exported more than three times as much per capita as is exported from the United States. On the plains of Argentina there is grown such quantities of wheat and corn, and so many cattle are raised, that this country is our greatest competitor in this regard. From the city of "Good Airs" frozen meat, as well as wheat and corn, are sent in great quantities to Europe, and manufactured articles imported from England, Germany and France.

What you have learned about Buenos Aires shows you that in addition to being the metropolis of the Southern Hemisphere, it is one of the very important cities of the world.

## CHAPTER IX

### PARAGUAY

THE country of Paraguay lies far interior in the heart of South America. Bolivia and Brazil lie to the north, Brazil to the east and Argentina to the south and west. There is only one other South American country that is not touched by the ocean. Do you know which this is? Paraguay is located midway between the two oceans on the east and west. Its northern boundary is equally distant from the northern and southern extremities of the continent. It covers an area greater than that of the New England states and the British Isles combined. Its population is about equal to that of the city of Baltimore.

For the most part Paraguay is a plain country with hilly or low mountain stretches here and there in the south and east. The principal mountain range extends from north to south. The Paraguay and Parana are two mighty rivers that flow through and border the country. The principal city is Asuncion, the capital.

Like many other countries of South America, Para-

guay has a history reaching back years and years. The country was discovered by Sebastian Cabot. In the years 1526 and 1527 Cabot, an English explorer, sailed far up the Parana and Paraguay rivers. For a long time the country was governed by Spain. In 1811 the independence of Paraguay was declared. It is now a republic. In Paraguay the voting age is 18 years. The president is elected for a term of four years. He has five ministers or secretaries. These serve much the same purpose as do the cabinet members in our own country.

You will see that the Parana River, which forms the southern boundary of Paraguay, rises far away in the mountains of Brazil. This river is more than 2000 miles in length. Large vessels can navigate the river to where it becomes the boundary of Paraguay. Then for 600 miles smaller vessels travel back and forth as far as the Guayara Falls. The Paraguay River also rises in Brazil. This is the most important river. It flows through the center of the country. Large boats can sail up the Paraguay to Asuncion and Villa Concepcion, which are built upon its banks. Farther north, small boats carry produce and passengers. The Paraguay River is 1800 miles long.

The Paraguay joins the Parana just at the southwestern corner of Paraguay. Several other rivers join these as they flow south. Then the Uruguay

River unites with them and they form the Rio de la Plata. This is one of the largest estuaries in the world. The other important rivers of Paraguay are the Pilcomayo, Jejun and Tibicuary. These are all branches of the Paraguay. The Pilcomayo, before it joins the main river, forms the western boundary of the republic. Most of these rivers have low banks and flow through level country.

There are two lakes of importance: Ipoa, in the southwest, covering an area of 100 square miles, and Lake Ipcaroi, next in size. Neither of these lakes can be used by vessels.

Because there are few railroads in Paraguay, the rivers furnish the chief means of transportation. The Paraguay Central is the only railway through the interior. It extends from Asuncion to Pirapo and to the Parana River. However, more railroads are being built.

Back from the cities and the rivers, great herds of cattle cover the plains as in Argentina. In the north and west is the valley of the Gran Chaco, or Great Hunting Ground. This is partly forest and partly grassy plain or pampas. This region is sparsely settled and nomadic Indians roam and hunt here.

Paraguay has a tropical climate, but it is dry and healthful. Almost all the products of the tropical and temperate zones grow here. The cool ocean breezes

blow from the south and east during the summer months. This is the season of rain. The hot, dry winds blow from the north.

From the cattle are produced large quantities of jerked beef, hides and tallow. Horses and sheep are raised in great numbers. Of the fruits grown, bananas, peaches, mandarins, oranges and other citrus fruits are among the most important. Paraguay is one of the few countries in the world where oranges grow wild. These are exported in large quantities to Buenos Aires. The principal orange-growing district is Gaguaron, 50 miles east of Asuncion. Grapes are cultivated and wine is made. Most of the bananas are shipped to Rosario and Buenos Aires, where they are sold in the markets.

Tobacco is one of the chief agricultural products. This finds ready market in Argentina. The cotton grown in Paraguay is of excellent quality. The fiber is long and silky. Each year the amount of cotton produced increases and much is shipped to Europe. Rice is also grown. Coffee, manioc, cane sugar and indigo are important productions.

The principal crop is the Mate or Paraguay tea. This tea is produced from the dried leaves of the Brazilian holly. About 18,000,000 pounds, or 9000 tons, of this crop are dried and treated every year. Fully half of this is sent out of the country. Argentina

and the other South American republics consume great quantities of this tea. The plant is found in the northeastern part of Paraguay where it grows wild over large areas. In some sections it is cultivated. The tree grows to a height of 12 to 25 feet. It is very bushy. Its leaves are light green in color and it bears a small, dark berry. The natives cut the branches and carry them in their *ponchos*, or blankets, upon their heads.

In the dry season when the leaves are gathered they are dried by means of brush or wood fires. The leaves are then powdered by being pounded with sticks or flails. Sometimes they are placed in a rude crusher drawn by oxen hitched to a long pole or sweep. Again an overshot water wheel and water power are used to grind the leaves. This fine substance can then be pressed into sacks of 200 pounds each and shipped.

The Yerba Mate is usually served in egg-shaped gourds. The powdered leaves are placed in a gourd and hot water added. The tea is sipped through a long tube. The tubes used by the poor people are made of wood or bone. In the homes of the well-to-do, however, they are of brass or silver. The tube, or stem, is called a *bombilla*. The lower end of the *bombilla* is spoon-shaped, flattened and perforated. These holes admit the beverage but exclude the tea leaves. The Mate is frequently served with sugar or lemon.

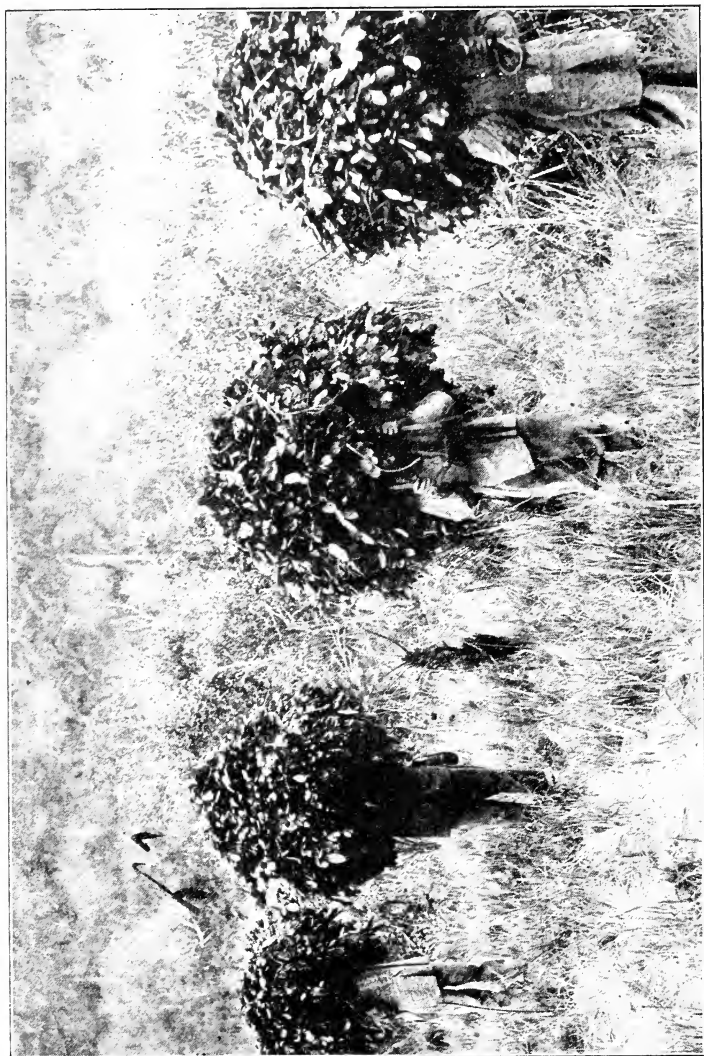


Fig. 39. — Carrying branches of Yerba Mate, Paraguay.  
*Courtesy of Pan American Union.*

Many prefer to take the tea without either, following the custom of the orientals.

The gourd is passed to one member of a family or to a visitor. It is then replenished and passed to another. In this manner it may rotate several times amongst the guests. This custom is followed on entering a home, and reminds one of the Indian custom of smoking the pipe of peace, so common in our early history.

The forests cover the mountain slopes. Here are found woods of much value. The curupay is hard and durable and used for railway ties, piles and heavy construction. As the bark of this tree contains tannin, it is exported. Another wood is the quebracho, valuable for ties and for tannin. There are many other cabinet and dye woods, including lapacho and cedar. There are numerous medicinal plants. The forests produce resins and balsams, and a native fiber plant called mapajo, which the Indians use in the manufacture of a coarse textile. This is woven into cloth. There is considerable rubber produced. Most of this is shipped to France.

One of the principal manufacturing occupations is the extract industry. An extract is obtained from the leaves of the native orange tree. This extract is called the oil of petit grain. In the orange belt east of Asuncion are located large distilling establishments



where the work of extracting is carried on. The leaves are picked and taken to these plants and the oil extracted. It takes from 300 to 350 pounds of orange leaves to produce one pound of essence. This extract or oil is used in the manufacture of flavoring extracts. It is particularly useful in the making of various perfumes also. Many of the perfumes you use contain extract of orange leaves shipped from far-away Paraguay.

The country is not very rich in mineral deposits. There are some iron and copper mined, and mercury and manganese are produced. Other minerals are kaolin, agate and opals.

The largest city is Asuncion, the capital. It is on the east bank of the Paraguay River, which at this point is nearly a mile wide. Asuncion was first settled by Spanish explorers in 1536. It is not a large city, having a population of about 55,000. The city is located where the Pilcomayo River empties into the Paraguay. There are many flourishing mercantile establishments. The trade is conducted chiefly by Germans, French, Italians and Spanish.

The buildings are substantial but not imposing. The streets are poorly paved. In the center of the city is the avenue Independencia Nacional bordered by palms, banana and other tropical trees. The houses are brilliantly painted in yellow, green or white. The

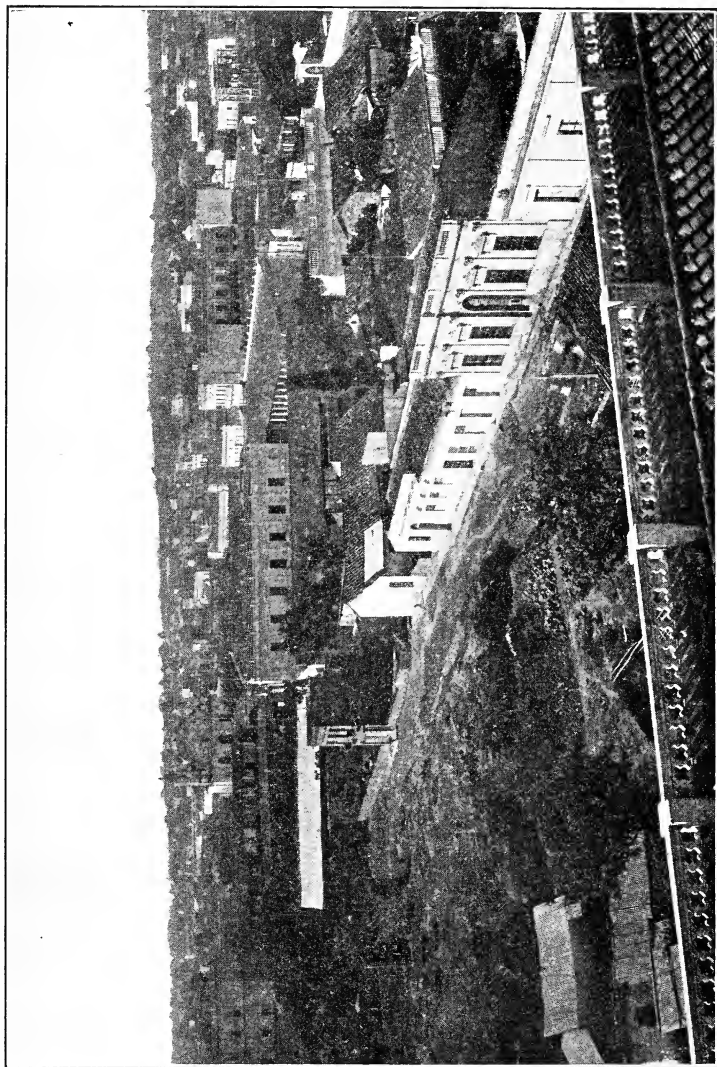


FIG. 40. — View of Asunción.

windows of many buildings are fitted with heavy iron gratings. Back of the city the ground rises in abrupt terraces, and a splendid view of the town and river is secured from this district. The city is surrounded by a rich agricultural region.

Asuncion is a long distance from the ocean, and all exports to Europe or the United States must be shipped down the river to Buenos Aires or Montevideo. From Asuncion to Buenos Aires the distance is about 1000 miles. Paraguay tea is the chief export. Other exports of importance are tobacco, oil of petit grain, hides, citrus fruits, cotton, rubber, tannin, woods and other forest products. Sugar, oranges, coffee, manioca and rice are also sent out. Germany and Belgium receive most of the exported articles. Of the South American countries, Argentina and Uruguay offer the best markets.

The most important manufacturing industry is tanning leather. In Asuncion, calf and kid leather are tanned, as well as saddle and harness leather. In other cities only sole leather is tanned. Cigars and cigarettes are manufactured in small quantities.

The value of the imports from the United States is more than three times that of Paraguay's exports to us. Modern agricultural machinery, tools, axes, machetes and small manufactured hardware are purchased from this country. Kerosene is another

import. Dressed hides and leather, ready to make into boots and shoes, are sent back to Paraguay. More is imported from Great Britain than from any other country, and Germany stands second. Cotton goods, textiles, clothing, dry goods of all kinds, hats and furnishings for men, groceries, canned meats and provisions, hardware, drugs and medicines are sent in from Europe.

The market of Asuncion is a most interesting place to visit. Here you would see comparatively few men. Upon the ground outside, the poorer people display their wares. Inside on shelves and in cases the higher-priced articles are for sale. The river near by furnishes many fish. There are fish and meats, wild fruits of many varieties, vegetables and dairy products. The butter and cheese are very white in color. Cream is sold in stone jugs. Bread and maize are on the shelves, and a beverage, a native beer made from sugar cane, is offered in stone mugs. Many bouquets of flowers are displayed.

If you go to market in Asuncion you must carry your basket or pan with you, for goods are not delivered as they are in our country. The women do the marketing as well as sell the goods. Most of them carry large pans upon their heads. They dress simply and seldom wear shoes. As they walk along the street balancing pans of butter, eggs, and fruits upon their heads they

are an interesting sight. The body is held erect and the hands are not used in balancing the load.

In Paraguay the native men are small. They wear white shirts and baggy trousers with a gay sash and a sombrero. They are usually barefooted. These men are excellent horsemen and many of them go armed. In Paraguay, more than in other South American countries, the native blood is mixed with that of the Indian.

Men and women, and even boys and girls, smoke large cigars. During the heat of the day there is very little activity on the streets. This is the time for the *siesta* or rest. The morning and late afternoon and evening are the times for work. This custom is followed in almost all tropical countries.

Other cities of importance on account of their shipping are Villa Concepcion, on the east bank of the Paraguay River, north of Asuncion, and Huniaita on the same river, near the southern boundary of the country. On the Parana River, toward the southeast corner of Paraguay, is Villa Encarnacion. Other cities are Villa Rica, San Estanislao and Caazapa. All of these cities are small.

In the ranch districts the poorer natives live in rough bamboo or mud houses. In the cities many of the roofs are of tile. The well-to-do natives of the cities imitate the Europeans in dress and other customs.

The railway travel is in four classes. The engines and cars are of English make. In the country are over 400 public and private schools. There are two normal schools and at Asuncion there is a university.

## CHAPTER X

### URUGUAY

OF all the republics of South America Uruguay is the smallest. It covers about the same area as does North Dakota. Although it is sparsely settled, it has a larger population per square mile than any other country on the continent. It contains about 1,000,000 people, and one third of these are in Montevideo, the largest city and the capital of Uruguay.

The location of Uruguay is excellent. The wide estuary of the Rio de la Plata and the Atlantic Ocean are on its southern boundaries. Brazil touches it on the north and east and Argentine Republic on the west. The Uruguay River forms the boundary between Uruguay and Argentina. Being situated south of the Tropic of Capricorn, and on the Atlantic Ocean, the climate is pleasant and healthful. The summers are not too hot nor the winters too cold, the seasons comparing favorably with our spring and autumn.

Uruguay is for the most part an extensive rolling plain. Scattered here and there are hills, but there are no high mountains. The country is everywhere

well-watered and fertile. The plains are grass-covered. Although there are no large forests as in Brazil, there is an abundance of timber for all necessary uses. While people from many nations are to be found in the cities, the greater part of the population is native-born.

Since the year 1828, Uruguay has had its independence. From the beginning of the sixteenth century the territory that is now Uruguay was claimed by Brazil on the north and Buenos Aires on the south. Brazil was settled by the Portuguese, and Buenos Aires was held by the Spanish. The natives of Uruguay or *Charruas* were freedom loving people and independent by nature. Finally, after being ruled by Great Britain, by Spain, and Portugal, Uruguay became independent. However, even to the present day, the surrounding nations have quarreled over Uruguay. Disturbances within the country are also frequent.

On account of its well-watered soil and grassy plains, the raising of cattle and sheep is the chief industry of Uruguay. The Pampas, or grassy central plain of South America, extends across the country. Agriculture is not extensively carried on. About one twentieth of the land is cultivated, but as time goes on the growing of grain receives more attention. Vegetables in great variety and fruits of the sub-tropical and temperate zones grow in abundance.



Peaches of the finest quality, and grapes are produced. These ripen as early as February. The grapes are sold in the markets for table use, and much wine and alcohol are made. Olives are now being cultivated.

With the products of the range, Uruguay is becoming a competitor of Argentina and other countries, in the European markets. Tremendous numbers of cattle and sheep fatten on the rich grass of the plains. There are exported "jerked" or dried beef, corned beef, ox tongues, mutton, canned and frozen meats of all kinds. The meat salting factories are called *saladeros*. Hides form an important article of export. Tallow, horns, wool and sheepskins are sent out. Much of these products go to England and Germany, but France buys the largest quantities. There are in the country 8,000,000 cattle and 25,000,000 sheep. The hides and skins are four times as valuable as all agricultural products.

The most important article of manufacture is the extract of beef. The extract is made by the great German firm of Liebig. This company has many thousands of acres of pasture and many hundreds of thousands of cattle in Uruguay. The meat is placed in large tanks or kettles after the fatty portions have been removed. It is stewed and a soup-like substance obtained. All grease is skimmed off. By this process, four pounds of lean meat produce one

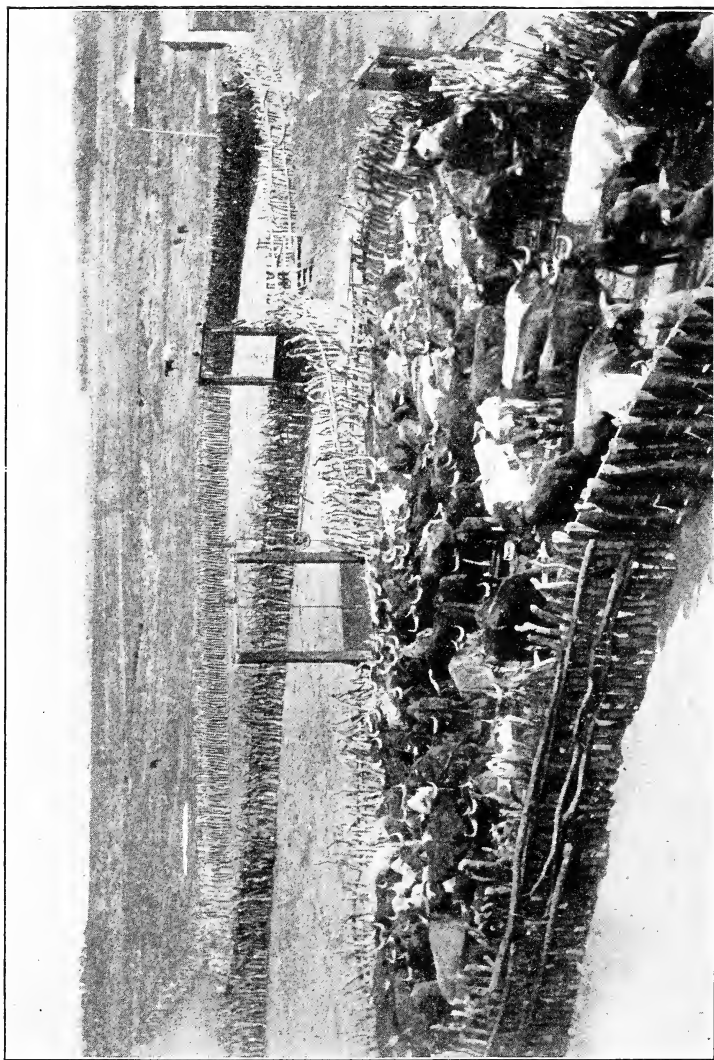


Fig. 41. — Cattle pen in stockyards near Montevideo, Uruguay.  
*Courtesy of Pan American Union.*

pound of extract. The liquid passes through one process after another until when cooled it becomes a jelly-like substance. This is shipped in large tin cans to Antwerp in Belgium. Here chemists examine the extract, and if it is pure it is put up in the small cans in which you buy it. From Antwerp it is sent to all parts of the world.

All portions of the animal are used. The hides are shipped for leather. Horns and hoofs are valuable in making glue. The meat that is left after the extract is obtained is made into a fertilizer. The bones are ground and mixed with this meat.

Montevideo is frequently spoken of as one of the most beautiful residence cities in the world. Its location, midway of the south coast of the country and on the estuary of the Plata River, gives it a great commercial advantage. Here the mouth of the river is over 50 miles wide. This city of more than 300,000 is built partly upon a small peninsula and partly upon the mainland bordering a large semicircular bay. The bay stretches around to the west of the city. Encircling this bay is an embankment which serves as a protection to the city and as a pleasant promenade. Scattered over the city are beautiful residences and gardens where trees are grown and flowers bloom the year round.

Back of the city toward the west side of the bay is

a hill 500 feet high. The city slopes gently down to the bay and from the hill called El Cerro, or the Mount, an excellent view may be obtained. Montevideo means, "Behold the Mountain." Do you remember that the city of Montreal in Canada is named from a similar hill, called Mount Royal? Upon the slopes



FIG. 42. — Legislature building, Montevideo.

of El Cerro there are grass and foliage. Upon the top there is a fort. There is also a lighthouse, the revolving light of which can be seen to a distance of 25 miles.

The capital of Uruguay is a most attractive city. Many of the buildings are modern and imposing. The general type of architecture is Italian. Of the buildings

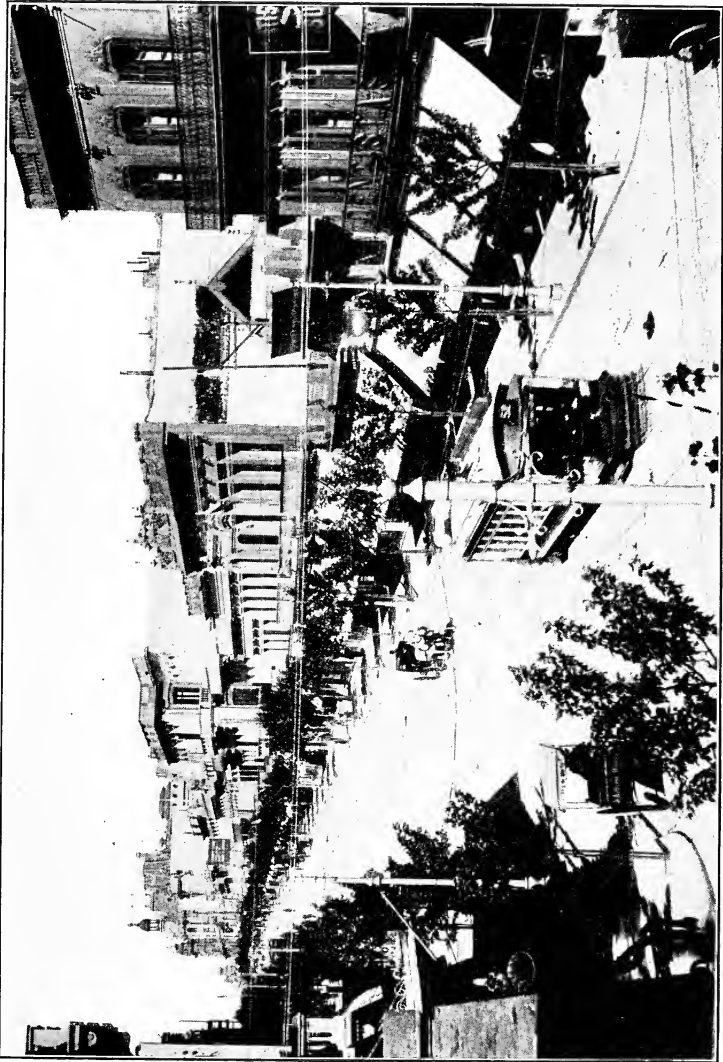


FIG. 43. — Eighteenth of July Street, Montevideo, Uruguay.

*Courtesy of Pan American Union.*

the legislative palace is among the most beautiful in the world. There are many elegant theaters, the Solis being the finest. The city has a magnificent cathedral and excellent municipal buildings. The Calla Zabala and Boulevard 18 de Julio, named in remembrance of the day upon which the republic was founded, are beautiful thoroughfares. The Plaza and Zabala Square are much frequented.

The city is especially clean, the slope to the water front giving excellent sewer and drainage facilities. Montevideo shows signs of much refinement. Education is well advanced, and music and art are given attention. In the neighborhood of Montevideo are several beach resorts. These are patronized not only by the residents of the city but by many visitors from Buenos Aires.

Name what you think to be the chief exports of Montevideo. Give a reason for your statement.

There are several other smaller cities important as shipping points. Paysandu, Salto and Fray Bentos, all are on the Uruguay. At Salto there are several meat salting factories. Here the river is very wide. The Liebig extract factory is located at Fray Bentos. Other towns are San Jose, Santa Lucia, Rocha and Maldanoda in the south, the latter on the coast. Mercedes is on a branch of the Uruguay in the southwest part of the country.

For every two dollars' worth of exports from Uruguay to the United States, three dollars' worth are imported from our country to Uruguay. About one third the entire imports of Uruguay come from Great Britain. The term Banda Oriental is sometimes applied to the country because it lies east of the great Uruguay River. The Spanish language is generally spoken. The standing army is composed of those who have served in the penitentiary or have committed some crime. All classes are inveterate cigarette smokers. The prevailing religion is the Roman Catholic. Education of the primary grades is compulsory throughout the republic. There is more money spent for education, considering the size of the population, than in any other country in South America.

The Rio de la Plata River, which is formed by the Parana and Paraguay, is in reality a bay, or wide estuary mouth. While it does not flow through Uruguay or in fact through Argentina, it is of the greatest importance to these countries. Sebastian Cabot named the river about 1520, the name meaning "river of silver." Some say that the name was applied on account of the great quantities of silver which Cabot took from the Indians along the shores. At its mouth the river is 120 miles wide. The river carries down silt which colors the water dark yellow. This color is discernible in the waters of the Atlantic to

a distance of 100 miles from the river's mouth. The water of the river is fresh until only a few miles above Montevideo. The average depth of the Plata in the vicinity of Montevideo is only about 50 feet. Navigation is made somewhat difficult by the many rocks and shoals. Uruguay, through its capital city, Montevideo, is virtually in control of the entrance to the Plata River. As this river means so much to Paraguay, Argentina and Bolivia, it is easy to understand how important is the position of Uruguay.

Not only are large quantities of dried meats shipped from Montevideo, but there has developed an excellent market for fresh meats.

There are a number of railroads in Uruguay. Most of these center in Montevideo. One line connects Montevideo with Paysandu, while another crosses the country to the Brazilian frontier. Other lines connect the city with other portions of the country.



## CHAPTER XI

### CHILE

WHEN you look at your map of South America, the country marked "Chile" appears to be little else than a mountain range extending from north to south. However, Chile is one of the most important of the countries of South America. Its extent of coast line from north to south is nearly 3000 miles. Its width from east to west is nowhere more than 200 miles and the average width is only 90 miles. Through its entire length the Pacific Ocean washes its western side. Peru lies to the north, and Bolivia and Argentine Republic join it on the east. The mountain chain that appears to cover the entire country, forms its eastern boundary, the boundary line extending along the crest of the range. This narrow strip of land lying between the Andes and the ocean is cut by numerous short, rapid rivers in its central and southern portions. In the southern half, the coast is rough and uneven and many small islands exist. This coast reminds you of the fjord coast of Norway or that of Southern Alaska.

Chile is the longest country for its width in the

world. It is as far from north to south as from Chicago to San Francisco. Its coast line would reach from Labrador to Key West. The country covers an area equal to that of Texas and Louisiana combined, and has a population of more than three and a quarter millions of people. You will be surprised to learn that the people of Chile live under a republican form of government, just as we do in the United States. This form of government has existed since 1833. The President is elected for a term of five years. How long is the term of office of the President of our own country? Chile is divided into twenty-three provinces and one national territory.

On account of the grandeur of its scenery, Chile has been called the "Italy of South America." Because of the fertility of its soil in the south, and central portions, the name "garden" has been applied to the country.

The climate in the north is dry. The high Andes Mountains chill the trade winds which blow over South America from the east, and the rain falls on their eastern slopes. In the central part of Chile and toward the south, the winds blow from the Pacific and deposit their moisture on the narrow plain. The climate is here cool and pleasant, much as it is in the northern portion of the Mississippi Valley. In the north the entire region is a desert, called the Desert of Atacama.

The central region is remarkably fertile, and agriculture is carried on extensively. In the south are plains and pasture lands. There are forests upon the slopes of the mountains.

Owing to its great extent of coast line every portion of Chile can be reached by water from the Pacific side. For this reason, and on account of the great number of indentations and protected landing places, there are several ports where vessels may put in and discharge goods or take on their cargoes bound for European or United States ports.

In the north of Chile there is a central valley or plateau formed by two ranges of mountains — the Andes on the east and coast range or western Cordillera on the west. Extending east and west between these two ranges are mountain ridges. This plateau extends south from Atacama 700 miles, with a width of 50 to 60 miles. Toward the south it becomes lower and lower.

The Desert of Atacama is practically without rain or vegetation. It is a dreary place in which to live, yet should you visit Chile you would find many people living and working there. This desert is worth more to the people than is any other part of the country. Chile produces minerals of great value. But the one of greatest value is called *nitrate of soda*. This nitrate occurs in deposits or layers just beneath the surface,

and is easily dug up. It is found on this desert plateau scattered over a territory 460 miles long and about 3 miles wide. The nitrate is hard, and white in color unless mixed with other substances or discolored.

Nitrate is shipped to Europe in great quantities. It is used on soil as a fertilizer. In Germany particularly, where sugar beets are extensively grown, the nitrogen is taken out of the soil. Nitrate renews this, and enriches the ground. It is also used to make nitric acid and iodine, and much of it goes into the manufacture of gunpowder. Not only Germany, but Great Britain, France and the United States buy large quantities of nitrate.

How these immense beds of nitrate came to be deposited in the Desert of Atacama is not absolutely known. Perhaps at one time, centuries ago, this desert was a vast lake. When the waters dried up, this substance was left, and on account of the dry atmosphere has remained to the present day.

Large tanks or vats are filled with hot water and the nitrate is then dissolved in them. The pure nitrate cools in the form of crystals when the water is taken out. Valparaiso and other ports ship much nitrate. The fertilizer which you buy to put upon your lawn, or around your trees or upon the field contains nitrogen, and Chile furnishes most of this. Whenever a tract of land has been used for years

without fertilizing, or when there has not been proper crop rotation — that is, a change of crop every few years — nitrate must be used to enrich the soil. Now you can understand why Chile is a wealthy and important country.

In the great central valley of Chile the soil is fertile. Here there grow apples, melons, grapes and other fruits and vegetables. Wheat and other cereals are grown in abundance. The sugar beet and tobacco are also important crops. On the grassy plains stock is raised and butter and cheese are produced. Hides and tallow are sent to European cities. There is considerable mining, and copper, coal, gold and silver are produced. Upon the mountain sides timber flourishes. Lumbering is an important industry. At the sea-coast many people are engaged in fishing. Manufacturing is carried on to a considerable extent.

South of the central plain is a vast region extending to the point of the continent. In this section the rainfall is plentiful. In the northern portion cattle graze upon the plains, and wheat, barley and fruits are grown. Farther south the mountains are forest covered and lumbering is a profitable industry. The Chilean pine grows to a height of 200 and even 250 feet. The trunk is light in color and sometimes 10 to 15 feet in diameter. Where are the largest trees on our continent? Other trees are the oak, from which ships, cars and vehicles

are made, the cypress, walnut, cedar, ash and beech. Fishing is also a profitable industry. In the plains to the south, and where the forests have been cut away, great bands of sheep roam. Mutton is shipped to England.

Other productions of importance in Chile are sulphur, guano, petroleum and natural gas. Flax is grown and horses are raised in great numbers. Manufacturing of many kinds goes on in the larger cities, the making of boots and shoes being one of the most important.

Of the chief cities, Santiago, the capital, is of interest. Santiago is situated 60 miles from Valparaiso, which is on the coast, but by rail the distance is twice as great. Santiago was settled in the year 1541, when the first settlement was called Santa Lucia by the Spanish explorer, Valdivia. The city is situated upon a plateau over 1700 feet in height and 40 miles long and half as wide. The climate is delightful and the scenery grand. All fruits, vegetables and grains of the temperate zone flourish here. As in California in the old days or in parts of Mexico to-day, the *haciendas* or plantations on this plateau are very large. Cattle and horses are raised extensively. In some places great eucalyptus trees border the farms.

Santiago is the third city in size in South America, only Rio de Janeiro and Buenos Aires being larger. The city is situated upon a plain surrounded by lofty

mountains, some of which are permanently snow-covered. It has many beautiful buildings and parks. An avenue 350 feet wide and 3 miles long has a park through the center in which is placed monuments to the heroes of the country. The architecture of the



*Courtesy of Pan American Union.*

FIG. 44. — Scene in Santiago with the Cordilleras as a background.

city is Spanish in character. In the center of Santiago there is a hill rising to a height of 300 feet. Here are fine homes and splendid drives. This hill is called the Cerro de Santa Lucia.

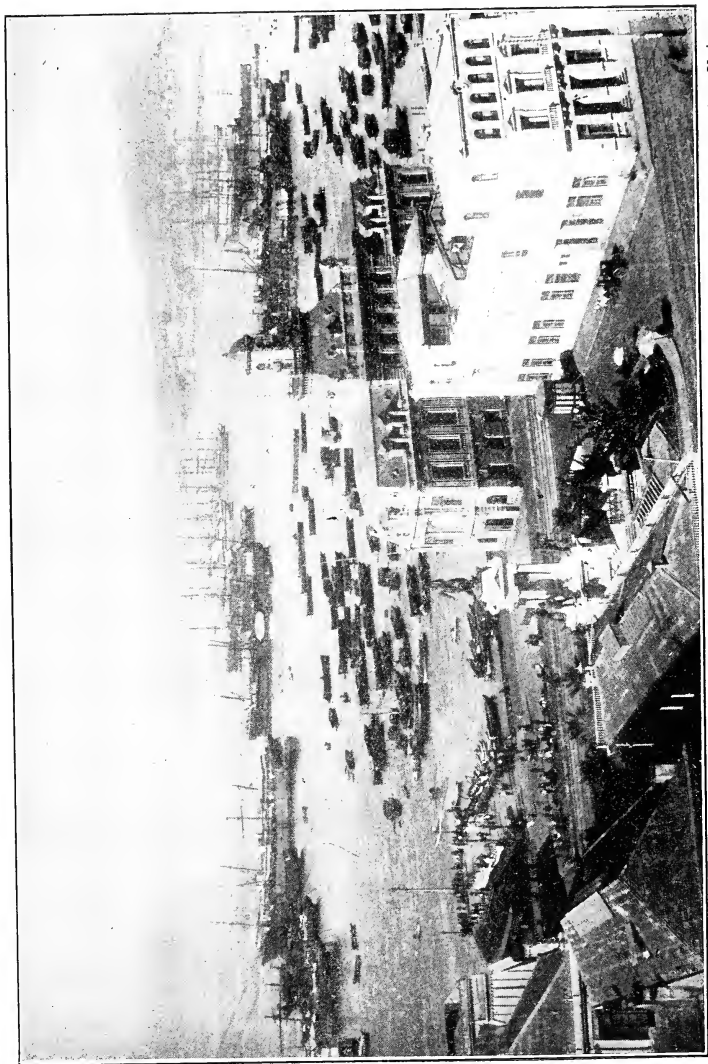
Valparaiso, on the Pacific Coast, is the largest port and, after Santiago, the largest city. Its population is over 250,000. Many of its buildings are modern,

but the language and a touch of the old life here and there lend to the city an interesting foreign aspect. Valparaiso is built at the foot of a mountain ridge upon a fine harbor. An embankment or sea-wall called a *Malecon* extends along the beach. The people are chiefly Germans, Italians and French. The Spanish language is used, and throughout the city Spanish signs are displayed. Yet most of those Chileans who belong to the business and professional classes speak English as well as French and Spanish.

There is much manufacturing done at Valparaiso. Most of the retail trade is carried on with France. Wheat, nitrate, copper, cabinet and dye woods, hides, tallow and other products are exported. Manufactured articles are brought in. Practically the entire city has been rebuilt since 1906, when a destructive earthquake visited it. Both Santiago and Valparaiso are subject to earthquake disturbances. A short distance from the city, a beautiful suburb, Vinto del Mar, is the home of many of the wealthy people.

From Valparaiso, the great Transandine, or Trans-Andean Railway winds its way over the Andes, past Santiago and on to Buenos Aires. This road was completed in 1910. It follows the Uspallata Pass, one of the many passes through the mountains. At Cumbre it is 12,800 feet above sea level and here there is a tunnel 2 miles long and half a mile below the surface.





*Courtesy of Pan American Union.*

FIG. 45. — Harbor of Valparaíso, Chile.

In the old days, travel by pack train through the Andes could not be carried on in winter on account of the snow. Much danger was experienced in making the journey. Just north of Cumbra is Aconcagua, the "Monarch of the Andes." This is one of the highest peaks in the world. Compare it with Mt. Everest in the Himalayas, and Mt. McKinley in Alaska. (See p. 8.) Many of the mountain peaks are snow covered, and glaciers creep down the mountain sides.

Of the other cities of Chile, La Concepcion, on the Bio-Bio river, Iquique, Antofagasta, and Punta Arena are among the most important. Concepcion is on the coast south of Valparaiso. It is an important shipping point. Cattle, wheat and grains are exported from Concepcion. Antofagasta, a city of some 20,000 people, lies 700 miles north of Valparaiso. Iquique is on the coast well toward the northern boundary of Chile.

Punta Arena, or *Sandy Point*, lies farther south than any other city in the world. It was first established as a settlement for criminals, but as those who were imprisoned here escaped, the city has been built up. Punta Arena is situated on the Strait of Magellan, and here steamers take on coal as they pass back and forth. There is perhaps no other place in the world, situated so far from a large center of population, that receives visitors from so many nations. Ships not only take on coal, which is mined near at hand, but Punta Arena

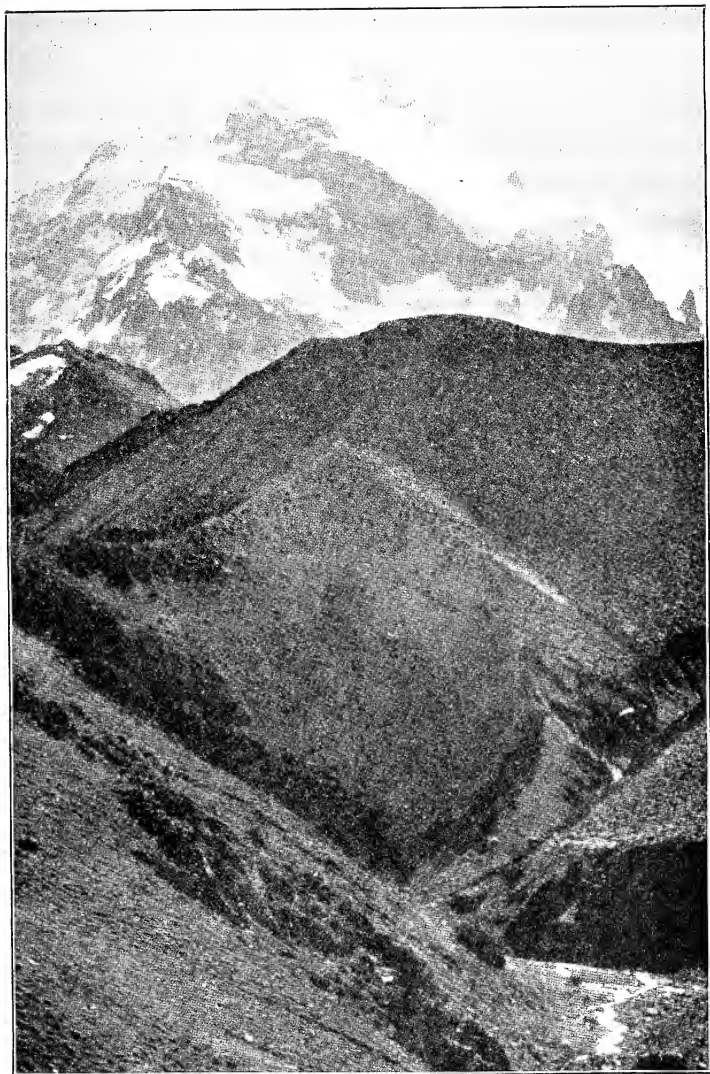
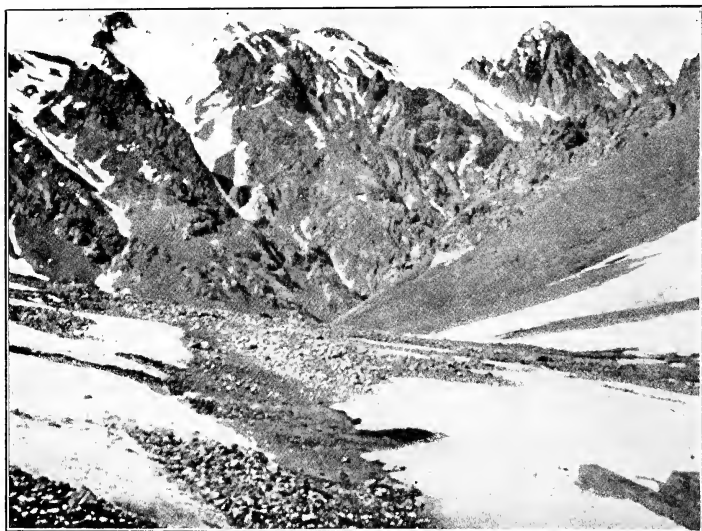


FIG. 46. — Aconcagua.

sends out furs, gold, silver and other minerals; cattle, hides and wool. Vegetables are furnished here to the sailors.

The city has about 12,000 people. The inhabitants are Europeans and Indians. The Indians who live in



*Courtesy of Lamport and Holt Line.*

FIG. 47. — Laguna del Inca, Andes.

the vicinity and along the Strait of Magellan hunt and fish, and trade with the people of the town.

By looking at your map you will find the southern part of the coast of Chile bordered with islands. Beginning with the Island of Chiloe in the north, one of the largest of the group, these islands follow the curve

of the coast, leaving a channel between them and the mainland 50 to 80 miles wide. Some of these islands are 2000 feet in height. Perhaps at one time the Cordillera or mountain chain extended as far as these islands, and what is now the narrow channel was once



FIG. 48. — Magellan Straits. *Photo by William G. Reed.*

land. Wellington Island, the largest, is 140 miles long and 30 wide.

Upon many of these islands cattle and sheep are pastured. Grains, vegetables and fruits are grown. Toward the south there are many varieties of trees furnishing valuable woods. The vegetation is luxuriant, and flowering creepers and moss cover the branches as in tropical regions. On the southernmost islands and on the mainland near the Strait the vegetation is low

and scrubby. The only tree is the beech of the antarctic regions. This is bent and twisted by the heavy winds and blowing sand.

Tierra del Fuego is the large island just south of the Strait of Magellan. This land was named by Magellan. As his vessel approached he saw many fires scattered here and there. Tierra del Fuego means "Land of Fire." The natives kept fires burning constantly as a part of their religious ceremony.

Cape Horn is at the point of a small island just south of Tierra del Fuego. It was named by Hoorn, an explorer from Holland, who visited the country in the year 1616. He named the cape from Hoorn on the Hoornerhop, a bay of the Zuyder Zee in North Holland. Cape Horn is nearly 1400 feet in height. On this rocky promontory wild celery grows in abundance and mushrooms are plentiful. In the surrounding waters fish abound. Pigeons and ducks are found in great numbers. About two thirds of Tierra del Fuego belongs to Chile and the remainder to Argentina.

Sailing vessels travel around the Horn. This is a dangerous journey, and sailors say there is no water so much feared as that south of Cape Horn. Storms rage here very frequently. Steam vessels usually pass through the Strait of Magellan. The passage is 400 miles long and in some places as much as 20 miles wide. Cape Froward, about the middle of the strait, is the

most southern part of the mainland of South America. The governments of Chile and Argentina have placed floating buoys in the Strait to point out the dangerous places, but these buoys are constantly shifted about by the heavy waves. Icebergs are frequently to be seen in the Strait. On Santa Maria, a small island not far from Punta Arena, there are many penguins. These



*Photo by William G. Reed.*

FIG. 49. — English Narrows, Smyth Channel.

birds are found chiefly in this far-away region. They have frequently furnished food to travelers and explorers when all other food was exhausted.

About 400 miles west of Valparaiso in the Pacific Ocean is an island belonging to Chile. This is the island of Juan Fernandez. It is 18 miles long and nearly as wide. The island has scant vegetation. A Scotch sailor named Alexander Selkirk, who quarreled

with the officers of his ship, was put ashore on this island, and lived here alone for several years. There is a peak 3000 feet high. Here Selkirk is supposed to have had his lookout, to watch for approaching vessels. A tablet is placed here in memory of Selkirk.

Have you read the book *Robinson Crusoe*? Defoe, the author, is supposed by many to have used the story of Selkirk for his *Robinson Crusoe*. Others think that Defoe did not describe Juan Fernandez as the island where Crusoe was wrecked.

The poet Cowper has written the following lines about Selkirk and his solitary home :

“I am monarch of all I survey ;  
My right there is none to dispute ;  
From the center all round to the sea,  
I am lord of the fowl and the brute.  
Oh solitude ! Where are the charms,  
That sages have seen in thy face ?  
Better dwell in the midst of alarms,  
Than reign in this horrible place.

Ye winds that have made me your sport,  
Convey to this desolate shore,  
Some cordial endearing report  
Of a land I shall visit no more.  
My friends, do they now and then send  
A wish or a thought after me ?  
O tell me I yet have a friend,  
Though a friend I am never to see.



But the sea fowl has gone to her nest,  
The beast is laid down in his lair;  
Even here is a season of rest,  
And I to my cabin repair.  
There's mercy in every place,  
And mercy — encouraging thought!  
Gives even affliction a grace,  
And reconciles man to his lot."

The people of Chile are sometimes called the English of South America. This is probably because they have acquired much territory in the past and reach out and trade with other nations. In its exports the country is rapidly coming to the front. The climate is healthful and the scenery grand in the Andes. There are many extinct volcanoes. In the north are several over 20,000 feet high. Earthquakes are frequently felt up and down the coast. The most important navigable rivers are the Maule, Cantin, Bio-Bio, and Valdivia.

## CHAPTER XII

### BOLIVIA

THERE are but two countries in South America that have no coast line, and Bolivia is one of them. This is a great commercial disadvantage. If a man had a farm not reached by any wagon road he might be able to secure permission to travel across the adjoining farm in order to reach one. The government of Bolivia has done something similar to this in order that the country may be in communication with points on the Pacific coast. Through treaties with Chile and Peru, commodities and people are transported between the Pacific ports in these countries and La Paz.

To construct a railroad from the coast of the Pacific Ocean to Bolivia is a great undertaking, for the mountains are lofty, and the grades are very steep. The Andes lie close to the western coast, and all of the material used in the construction of a road must be taken up their steep slopes.

Near the southern coast of Peru is the city of Mollendo, one of the ports of that country. From here a railroad winds up to Puno on Lake Titicaca, a distance

of 330 miles. Here the goods are transferred to small lake steamers and carried to the south end of the lake. Again they must be unloaded and once more placed in railroad cars at the town of Huaqui. After a haul of sixty miles they reach La Paz, the largest city of Bolivia. This city is a little more than 12,000 feet above sea level, and yet it is only about 300 miles in a straight line from Mollendo.

From the port of Antofagasta, Chile, La Paz can be reached in forty hours by the Oruro Railroad. This railroad is 730 miles in length. The city of Oruro from which the route derives its name is 12,000 feet above the sea, but the road reaches a greater altitude than this.

Quite recently a third route has been opened from Arica. This road is more direct than either of the others, and it therefore has a steeper grade. On account of the very steep grade it is a cog-wheel road for a part of the distance. Because of the difficulty which many people experience in ascending to great altitudes, there are oxygen compartments in some of the cars. In these compartments the proportion of oxygen is kept as it is at lower levels.

Why have men expended the vast sums of money necessary to connect Bolivia with the Pacific coast by rail? Were these roads constructed for the purpose of pleasure or for profit? In order to answer these questions we must learn what Bolivia has that attracts

people. Before we study her products let us observe a map of the country. This shows us that several of the tributaries of the Amazon rise in Bolivia. By means of canoes in the upper reaches of the streams, and larger boats at lower levels, considerable of the trade of central and eastern Bolivia is carried on.

The early Spanish explorers found that Bolivia was very rich in minerals, especially silver. From the region about Potosi, vast quantities of this have been obtained for several hundred years. The Indians who inhabited the land when the Spaniards first saw it used silver, gold, copper and tin. In all parts of the world men are eager to develop mines. The mineral wealth of Bolivia is to-day her great attraction. It is this that is drawing people to the country, and causing the construction of wonderful mountain railroads.

It was silver that led to the establishment of Potosi in 1545. This city, which has an altitude about the same as that of Mount Blanc, has a population of some 30,000. During the period of greatest mining excitement many years ago, its population was 160,000. Even if the mountains were high enough a city could not exist at such an altitude as this in our western United States. Explain how it is possible in Bolivia.

But silver is not the only mineral wealth of Bolivia. There are deposits of gold, copper, zinc, cobalt and tin. Tin is not called a precious metal, but it is very much in

demand, and is not found in large quantities in many countries. A great deal of tin is exported from Bolivia. All of the tin deposits now being worked are at very great altitudes. Name some of the uses of tin.

The great mineral wealth of Bolivia is found in the Andes, here very lofty. Several of their peaks are 20,000 feet above the sea and some of them are volcanic. There are two principal ranges between which is one of the highest plateaus in the world. This plateau, which ranges from 10,000 to 13,000 feet in altitude, has an area about equal to that of the state of Iowa. Tibet is the only inhabited plateau having a greater altitude than this one.

On the plateau is Lake Titicaca. This body of water is 135 miles long by 70 miles wide, and in the deepest part a line 1000 feet long would be required to reach the bottom. As you have learned, small steamers are used in transporting goods and people from one end of the lake to the other. Why are not large steamers used? The Indian inhabitants of the region use rafts and boats made of reeds that grow along the shores of the lake. These simple boats are called *balsas*.

From the deck of a steamer on the lake the passenger sees the inclosing walls of mountains, and observes that many of the peaks are snow covered and some conical in shape, indicating that they are volcanoes. On the slopes he can see villages and terraced fields

where the hardy Indian people grow their crops. The houses are generally made of stone, for this part of Bolivia has not much timber, although in the eastern part there are great forests. Explain this.

Upon this well-protected plateau the Spanish explorers found a high Indian civilization. The natives

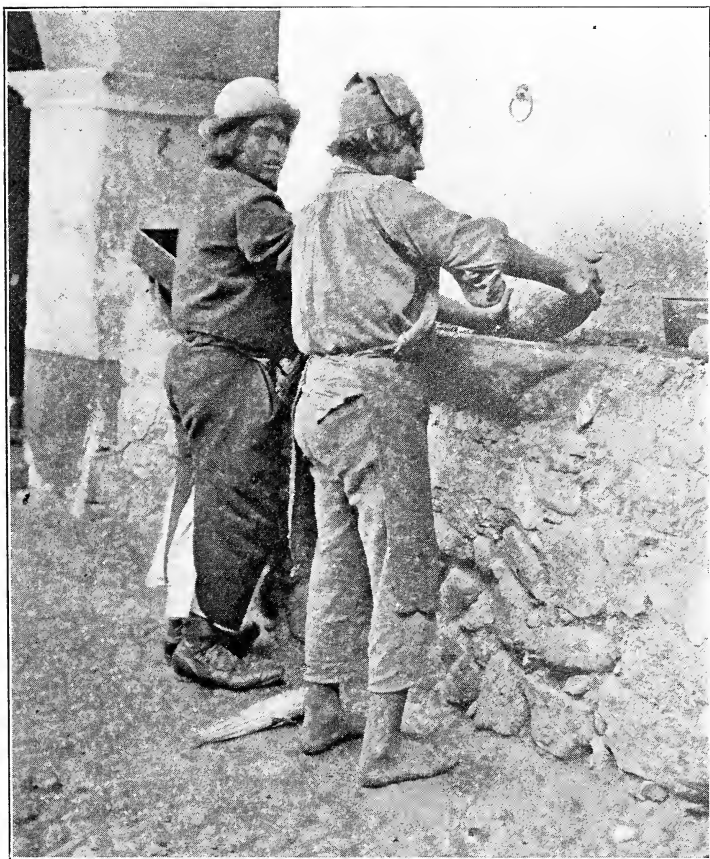


*Courtesy of Yale University.*

FIG. 50. — Lake Titicaca. Indian in the "balsa" towing balsas loaded with rushes. (Photo by Professor Isaiah Bowman.)

lived in villages, tilled the soil, had domesticated the llama, alpaca and vicuna, and made clothing from their hair. They also worked in silver, gold, bronze and leather, and had established a form of government.

The rulers of these people both in Peru and Bolivia were known as Incas. According to tradition the first Inca, whose name was Manco Capac, together with his



*Courtesy of "South America."*

FIG. 51.—Cholo boys of La Paz.

wife, came from one of the islands in Lake Titicaca. This is called the Island of the Sun, and the members of this family were believed to be the direct descendants of the sun. According to the story, Manco Capac taught the men how to till the soil, while his wife instructed the women in spinning and weaving.

It is estimated that there were some 20,000,000 of these people in the region extending from Bolivia northward. Roads and monuments which they built still remain as evidences of their civilization. Unlike most of the Indians of North America, they were not warlike, and a few Spanish soldiers easily conquered them.

The descendants of these people are to-day found on the plateau. They are usually rather short and are, of course, dark skinned. They have little ambition, and seem willing to take conditions as they find them. The men generally go barefooted. Their trousers are short and wide, and are split to the knee at the back. This gives greater freedom in climbing. On their heads they wear caps or hoods that fit very closely, and over this a hat of heavy felt or one of straw. An outer garment, which is practically a blanket, is known as a *poncho*. This, which may be red, brown or green, makes the costume very picturesque.

The hair of the women is black and is worn in braids. Bright-colored shoes and many skirts are worn. A colored scarf, called a *rebosa*, is thrown over the shoulders.



As they always carry their burdens on their heads, they walk gracefully. Like most primitive people they are fond of music and color.

You would find life upon this lofty plateau interesting, but very cheerless. The great altitude makes



*Courtesy of "South America."*

FIG. 52. — Market place, La Paz.

breathing difficult. The houses are without modern improvements. Even in La Paz there are very few stores. It is hot during the day and cold at night. Merchandise is very expensive because of the high cost of transportation. Coal costs from \$30.00 to \$50.00 per ton, although on the coast a ton can be bought

for \$5.00. Meat, vegetables and fruits are hard to obtain.

Aside from the railroads spoken of, and the lake, llamas furnish the only means of transporting commodities. These are used because neither horses nor mules can endure the high altitude so well. The llama practically gets its own living as it goes along, but it can carry only about 100 pounds.

The locomotives which draw the trains from the coast to the plateau do not enter La Paz. This is because La Paz is situated in a cañon 1100 feet below the level of the table-land. At the edge of the cañon the locomotives are detached, and the cars are taken to and fro by means of electric motors.

The streets are steep and narrow, and the houses that face them are generally painted some bright color, and have red-tiled roofs. The city was founded by the Spanish in 1548 because of the gold in the vicinity. It is one of the highest cities in the world, being 12,307 feet above the sea. Its population is about 80,000, and this is the largest city in the republic. La Paz means the *City of Peace*.

As already stated, central and eastern Bolivia are well watered, and have great forests. Here, as elsewhere in Bolivia, the population is largely Indian. In fact, only about 25 per cent of the total population is white. The forests produce much rubber, cocoa and

Peruvian bark. In the more thickly settled portions some coffee is cultivated.

Bolivia takes its name from Simon Bolivar, who did much for the independence of the people of South America. He is regarded by the people of that continent about as George Washington is in the United States.

The area of Bolivia is more than three times that of the German Empire, but its population is very small, being only about three to the square mile. It will never be a great agricultural country, and will never rank high in manufacturing. Minerals and the products of the tropical forest will continue to be its main sources of wealth. Improvement in transportation facilities between this country and the United States and Europe by the way of the Amazon will do much for Bolivia.

## CHAPTER XIII

### PERU

PERU is the name which the Spanish conquerors gave to the western part of South America stretching from Colombia to Chile. They found here a remarkable race of Indians. No doubt much that has been written concerning these people is exaggerated, yet the evidence that remains shows that in many ways they had made wonderful progress.

The rulers were called Incas, and their power was absolute. As you have already been told, they were believed to be the direct descendants of the sun, and were practically worshiped by their subjects. They lived in great buildings of stone which were erected without the help of machinery.

The different parts of the empire were connected by roads which wound over mountains and crossed streams. These roads were not constructed for purposes of trade, but to enable the rulers to govern their people, for the roads furnished a means of rapidly moving the army from place to place. Sections of these old roads, as

well as the ruins of monuments, temples and palaces, are seen to-day by the traveler in Peru.

The capital of this ancient empire was Cuzco. It was defended by great stone walls. Some of the blocks of stone used were 38 by 18 by 6 feet in their dimensions. These immense masses of stone were moved long distances, but it is not known how this was accomplished. Although no mortar was used, the stones were fitted together very carefully.

In Cuzco was located the most remarkable of the temples. It was known as the *Temple of the Sun*, for these people were sun worshipers. Upon its walls were plates of gold which blazed in the bright sunshine. There were precious stones and many objects of gold, silver and bronze in this building. These treasures were quickly taken by the conquerors, and the buildings were partially or wholly destroyed. During the early colonial days Cuzco was an important city, but it is now small and dirty. It is situated 11,380 feet above sea level. A visit to this land so rich in history is both interesting and instructive.

The Peru of to-day, while only a part of the ancient empire, is about three times as large as Texas, yet there are fewer people in the country than there are in New York City. The coast line of Peru is remarkably regular, a fact in part due to the rising of the land. Because of this regularity there are few natural harbors.

As to surface, Peru is divided into three sections. Along the coast there is a narrow plain. Here it very seldom rains, and crops cannot be raised without irrigation. Explain why this belt is dry. On the cultivated land cotton, sugar, rice, corn, coffee, olives, fruits, grapes and alfalfa are grown.



*Photo by Chester W. Brown.*

FIG. 53. — Plowing in Peru.

The coastal plain would be hotter than it is were it not for the influence of the ocean. A cold current which moves northward along the western coast of South America has a moderating influence. This is known as the Humboldt Current.

Callao is the chief port. Its harbor has been greatly improved and is now quite safe. A railroad leads from

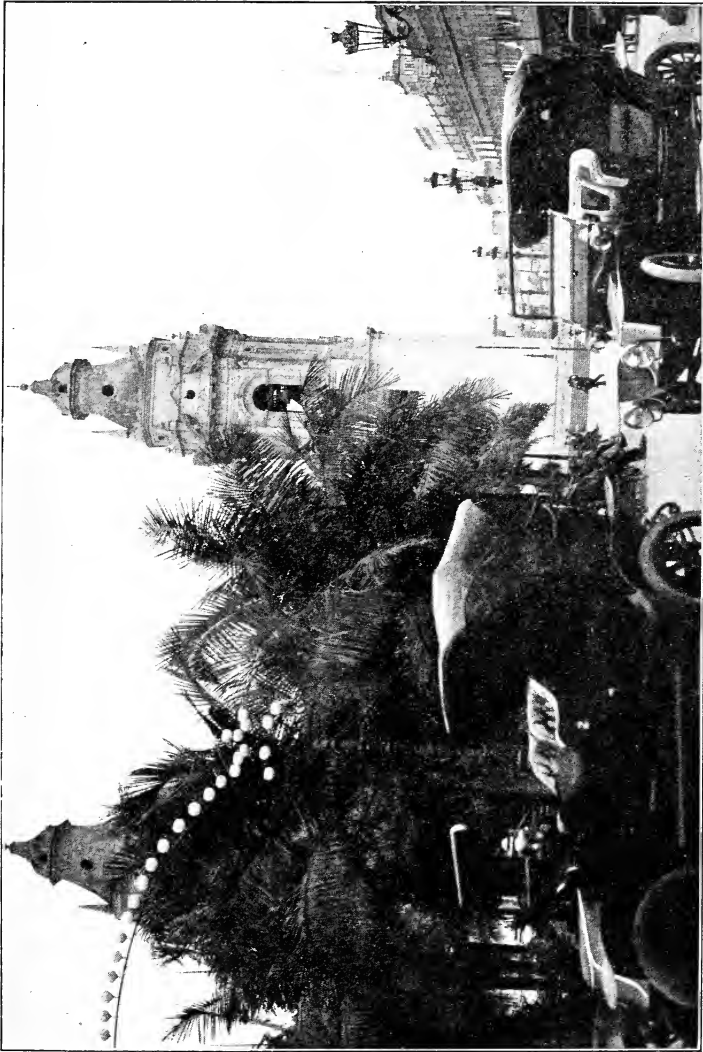


FIG. 54.—Main Plaza, Lima, Peru. (Photo by Hiram Bingham.)  
*Courtesy of Yale University.*

Callao to Lima, the capital, and beyond. Many of the business men of Callao live in Lima, which is but 9 miles distant, and has a better climate.

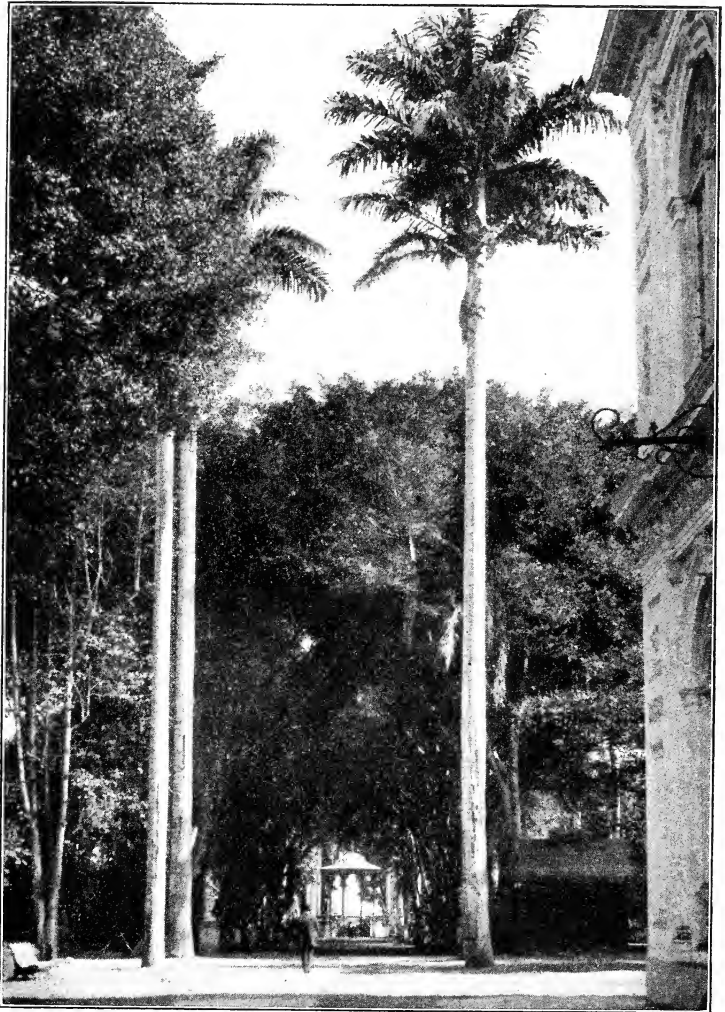
Lima was founded by Francisco Pizarro. The name means the *City of the Kings*. It is a modern city in every way, having electric light, cars, gas, telephones, paved streets, parks and other improvements. One hundred years before the founding of Harvard College the Spaniards established a university in Lima.

The city is built on a broad, fertile plain at an altitude of 500 feet. Its temperature is very uniform. A southwest wind is greatly welcomed, and is called by the people the "Callao doctor." What is the prevailing wind? Some of the buildings have massive street doors, ornamented with brass. The older houses have barred windows and balconies of carved mahogany. The city has a population of more than 100,000.

In the southern part of Peru is Mollendo, another seaport, although it has no harbor. As you have learned, a railroad connects this port with La Paz, Bolivia. It also connects Arequipa, and other Peruvian points with the coast. Owing to the lack of rainfall, the water used in Mollendo is obtained in the mountains many miles away and is piped to the city.

In going from Mollendo to Arequipa the traveler crosses the Islay Desert. Here there are remarkable sand dunes. They are crescent-shaped, and are slowly



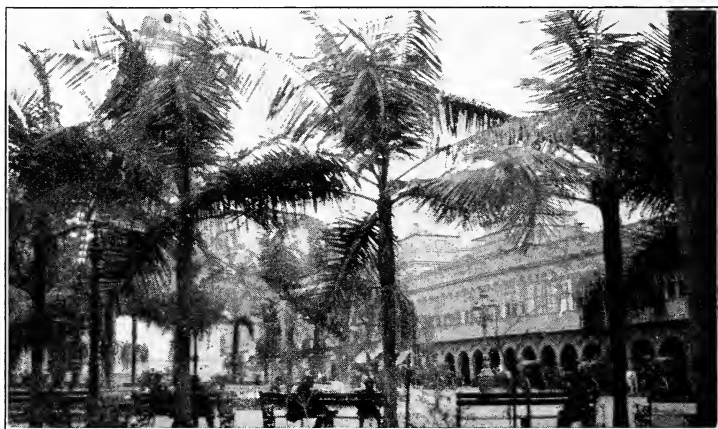


*Courtesy of Yale University.*

FIG. 55.—Zoölogical gardens. Royal palms and a corner of the National Museum, Lima. (Photo by Hiram Bingham.)

drifted by the winds. Why are sand dunes more common in dry than in moist regions?

At Arequipa, which is 8000 feet above the sea, an astronomical observatory has been established by Harvard University. From this observatory many stars not visible in New England can be studied. Why is



*Courtesy of Yale University.*

FIG. 56. — Hotel Francia-Inglaterra, Lima.  
(Photo by Hiram Bingham.)

this so? The observatory also has the advantage of being in a region where the skies are usually bright.

Beyond Arequipa is the volcano known as El Misti. This is one of the many volcanoes in Peru. In the valleys between the mountain ranges sugar, cotton, melons, wheat, corn, potatoes and other crops are grown. The plow is generally a crooked stick drawn by oxen.

In some places the grain is threshed under the feet of animals as it is in the Holy Land. The houses are commonly made of bowlders, and have thatched roofs with a layer of clay on top.

The second division of the surface features of Peru is known as the Sierra. This is made up of high moun-



*Photo by Chester W. Brown.*

FIG. 57. — Sand dune, Peru.

tains, table-lands and valleys. As climate depends upon altitude as well as upon latitude, these higher portions of Peru have a delightful climate. For every 300 feet that one ascends from the level of the sea the temperature falls, on the average, one degree Fahrenheit.

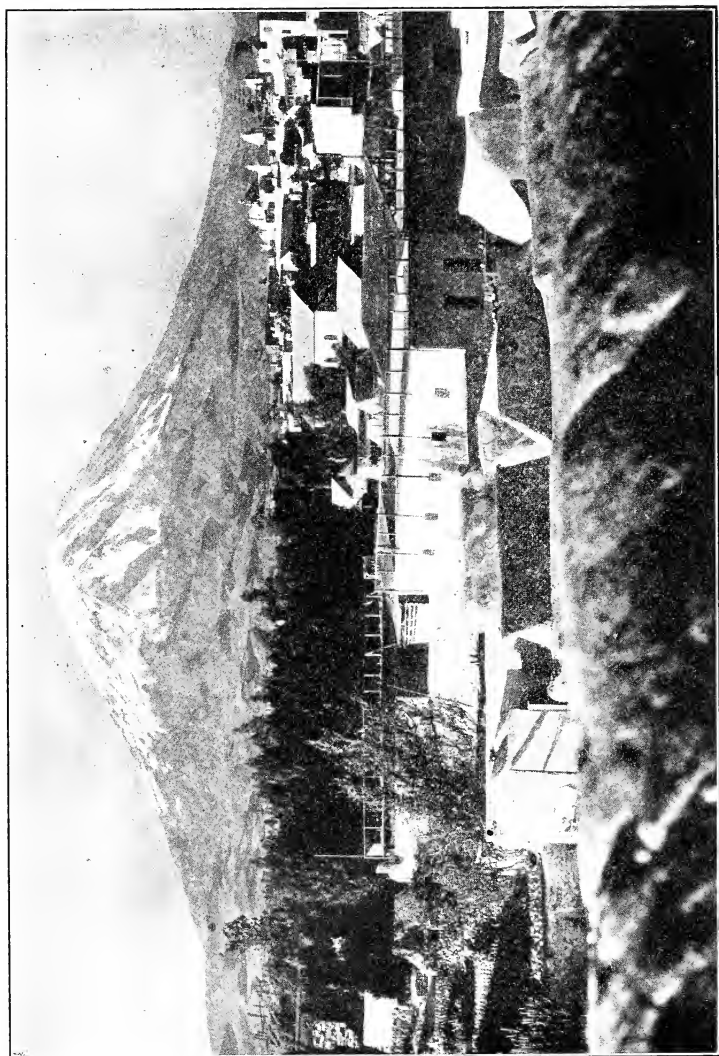


FIG. 58. — Arequipa. El Misti in the background. (Photo by Professor Harry Foote.)

*Courtesy of Yale University.*

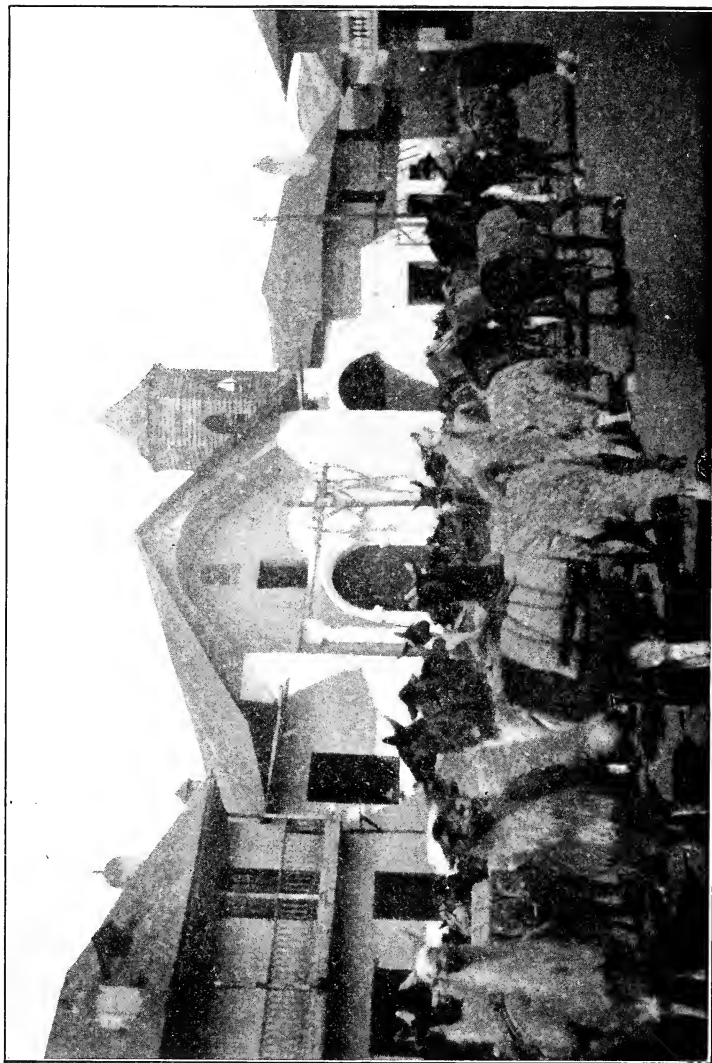
A great basin some 500 miles long, and varying from 25 to 300 miles in width, lies between the mountains. It was here that the Spanish explorers found the bulk of the population when they landed. In the mountain region the llama and the vicuna are the chief beasts of



*Photo by Chester W. Brown.*

FIG. 59.—Arequipa and El Misti.

burden. The llama, which, when full grown, is about six feet in height, has been used by the Indians for ages. It is useful in many ways. The flesh and the milk are used as food, from the skin garments are made, the hair is used as we use wool. In ancient times the sinews



*Photo by Rev. Vernon M. McCoombs.*

FIG. 60.—Llamas in Peru.

furnished thread. The vicuna is smaller than the llama and has a wool that is as fine as silk.

The third division of Peru is called the montaña. This is a lofty mountain region, about two thirds of which is forested. These mountains are of great value



*Photo by Chester W. Brown.*

FIG. 61.— Old Inca Aqueduct in Peru.

to the country, for they condense the moisture in the trade winds and cause an abundant rainfall on the eastern slope. In this section the wet season begins in October.

Much rubber is produced in the montaña, as are also cocoa, vanilla and dyewoods. These are sent eastward

by way of the streams that flow into the Amazon. Locate Iquitos. Quite large vessels navigate the river to this point, and it is rapidly becoming important as a rubber-exporting center.

As in Bolivia, the mineral wealth is the greatest resource of the country. It is said that if all of the silver that has been mined in Peru had been made into silver dollars, they would, if placed side by side, encircle the globe seven times at the equator. In addition to silver there are deposits of gold, copper, iron, coal, petroleum, salt and borax.



## CHAPTER XIV

### ECUADOR

ECUADOR takes its name from the equator, which crosses the northern part of the country. With the exception of Paraguay and Uruguay it is the smallest of the republics of South America, and yet its area is equal to that of the state of Colorado. The largest gulf on the western coast of South America belongs to Ecuador. Name and locate it.

Ecuador is a land of lofty mountains. There are more than 100 that are higher than Pike's Peak, and of these about 30 are snow-capped throughout the year. Some 50 of these mountains are volcanoes. Cotopaxi, 19,613 feet in altitude, is one of the most lofty volcanoes in the world. Antisana, Illiniza and Cayambe are other very lofty volcanoes.

Being in the belt of calms, Ecuador is well watered, and as a result, streams are numerous. Her largest river is the Guayas, the largest stream on the western coast of South America. The rivers are so short and swift that with the exception of the one mentioned, they are of no commercial value. The eastern part of

the republic is drained by some of the tributaries of the Amazon. The Napo, one of these, is navigable.

Guayaquil, which according to the map appears to be situated on the coast, is really about 45 miles up the Guayas River. Along the stream the graceful bamboo, the mangrove and many other forms of tropical vegetation may be seen. The Indians live in huts built of poles, with walls and roof of palm leaves. The city has a population of about 120,000. Tremendous quantities of cocoa are exported from Guayaquil, as it is the chief port of the country. Because of its situation, about three fourths of the exports of Ecuador pass through Guayaquil. Guayaquil is connected with Quito by rail.

If you will examine a map of South America, you will see that Quito, the capital of Ecuador, is situated close to the equator. As a matter of fact, it is 15 or 20 miles south of it. When in the streets of this city, one is between 9,000 and 10,000 feet above the sea, yet owing to the latitude it is never cold there. Here, as at all points on the equator, the sun rises exactly in the east and sets in the west, and day and night are equal at all times of the year.

Near the city is the extinct volcano Pichincha, the summit of which is much higher than that of any mountain in the United States outside of Alaska. But this is only one of many lofty mountains in the vicinity.

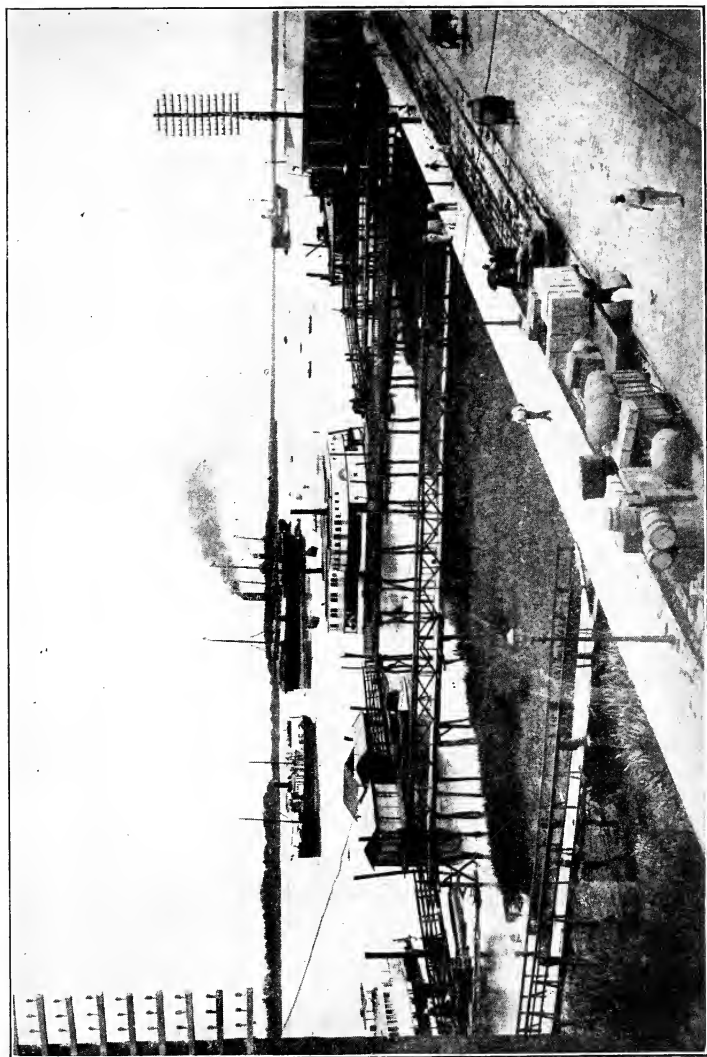


FIG. 62.—The Port of Guayaquil.

Eleven snow-capped peaks can be seen from Ecuador's capital. The observer of these snow fields can, in the same moment, see geraniums, roses, tulips and many other flowers all about him, no matter what the time of year. This illustrates the influence of elevation upon temperature.

Two deep ravines extend through the city in a general east to west direction, and in these, streams flow. The streets are for the most part very narrow, but straight. They are paved with cobble stones. Here and there we see a public fountain where the people obtain their supply of water.

In the intensely bright sunshine the buildings appear to be almost pure white. With their roofs of red tile they are very picturesque as seen through the foliage of the trees. The homes of the better class are built around a court or patio, and have wide projecting roofs. The entrance to the courtyard is generally made large enough to admit a horseman.

While electric light is common in the houses as well as in the streets, candles are still used by some of the poorer people.

Many religious paintings are made in Quito and exported to various points. Small figures carved from vegetable ivory find a ready sale. Much lace and embroidery work is done by the women.

The streets present a variety of life. There are, of

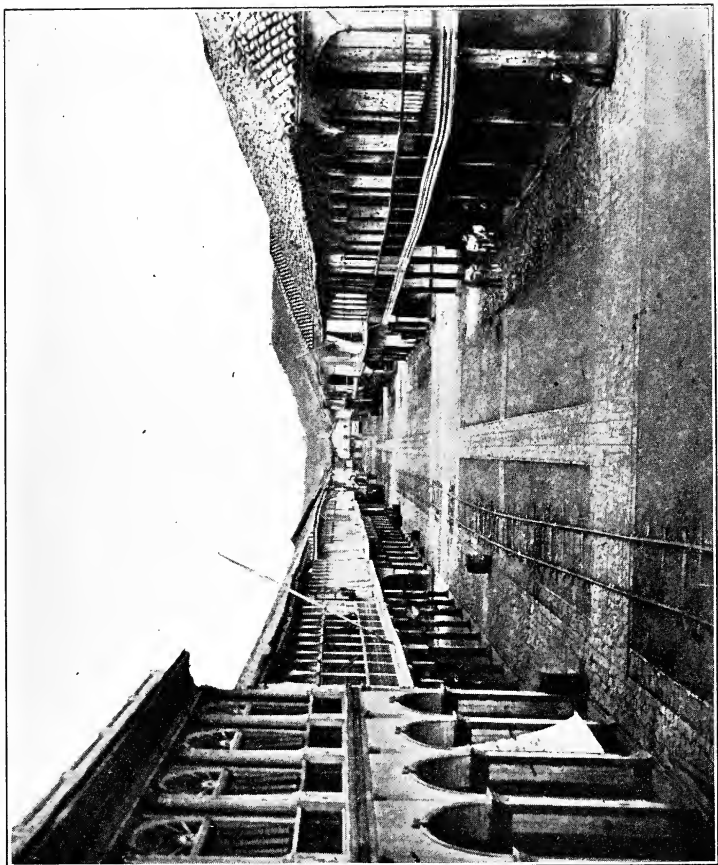


FIG. 63. — Street scene in Guayaquil.

course, many Indians. The men wear bright-colored ponchos, broad-brimmed hats of felt, and wide, white cotton trousers. Llamas are seen in the streets, and there are carriages drawn by horses. In the largest shops goods from New York, as well as from the large cities of Europe, are displayed. The population of the city is about 100,000.

On the lowlands there are sugar, rice, cotton, banana, tobacco and coffee plantations. From the forests come rubber, chinchona bark, sarsaparilla, vanilla and the vegetable ivory. This so-called ivory is the nut of the tagua palm. The nuts, which are encased in a brown shell, average about one inch in diameter. They sell for about \$2.00 per hundred in Guayaquil. They are exported to Hamburg, Germany, where they are used in the manufacture of buttons. Ecuador is one of the world's chief producers of cocoa.

On the plateau where a temperate climate prevails, we find wheat, corn, oats, potatoes, beans, cattle, sheep and horses.

Ecuador has some mineral wealth, gold, silver, emeralds and coal being produced. In fact Esmeraldas was given its name because formerly emeralds were exported from the place. Locate this city.

The Indians usually carry their burdens upon their backs. The load is supported by means of a strap that passes across the forehead. The women do most of

the work. One of their occupations is the manufacture of Panama hats. As they usually work but a short time each day, several months are sometimes consumed in making a single hat.

The century plant serves a variety of purposes. From it a fiber is obtained which is used in the manufacture of sandals. Its leaves are used to thatch the roofs of native houses, and from them a kind of soap is manufactured. The flowers of the plant are boiled, soaked in vinegar and used as a pickle. The women use the fiber of the plantain also in making cloth. This plant belongs to the banana family, and yields a fruit from which cakes are made.

Some of the native grasses are used in making hats, mats, fans and hammocks. Until commerce is highly developed people depend very largely upon the materials which their own country produces, and this is as true in Ecuador as it is elsewhere.

## CHAPTER XV

### THE COCOA INDUSTRY OF ECUADOR

Cocoa is a drink that is used in most parts of the world, and chocolate is sold in stores wherever one may go. These commodities were unknown in Europe until after the Spanish first visited Mexico. Cortez found that the people of Mexico were very fond of a drink called by them "chocolatl." As used by these people, chocolatl was a froth-like drink almost as thick as honey. "This beverage, if so it could be called, was served (to the rulers) in golden goblets, with spoons of the same material or of tortoise shell and finely wrought."

The Indians of South America were also fond of this drink. The Spaniards introduced this beverage into their own country, but it was some time before its use spread to other parts of Europe. It is not so very long since its use was considered injurious, but it is now known to be very nutritious.

To-day a very large part of the world's supply of cocoa comes from Ecuador. It is said that this country has the largest cocoa plantation in the world.



During the harvesting seasons more than 300 workmen are employed on this plantation. In fact cocoa is the most important export of Ecuador. It finds its way to other countries through the city of Guayaquil.

Cocoa and chocolate are obtained from the seeds of the cacao tree. This tree grows both wild and cultivated in Ecuador. It is a bushy tree, seldom reaching a height of more than twenty feet. The Ecuadorian planter places his trees about fifteen feet apart. Sometimes banana trees are planted between the rows to shade the young trees. When about five or six years old, the cacao tree begins to bear, and continues to yield for thirty or forty years. Although the fruit is ripening at all times of the year there are two main harvests. These occur about June and December.

The seeds of the tree occur in pods which vary from six inches to one foot in length. When ripe, the pods are not unlike ripe cucumbers in color. The pods are fluted, and are somewhat pear-shaped. The stem is attached, however, to the large end of the fruit.

There are often as many as fifty seeds in a pod, embedded in a pink pulp. The seeds, which are about the size of almonds, are white when fresh, but turn brown on drying. They are bitter to the taste. Two pounds of the seeds constitute an average annual yield per tree.

If we could visit one of the cocoa orchards in Ecuador at harvest time we would see some interesting sights.

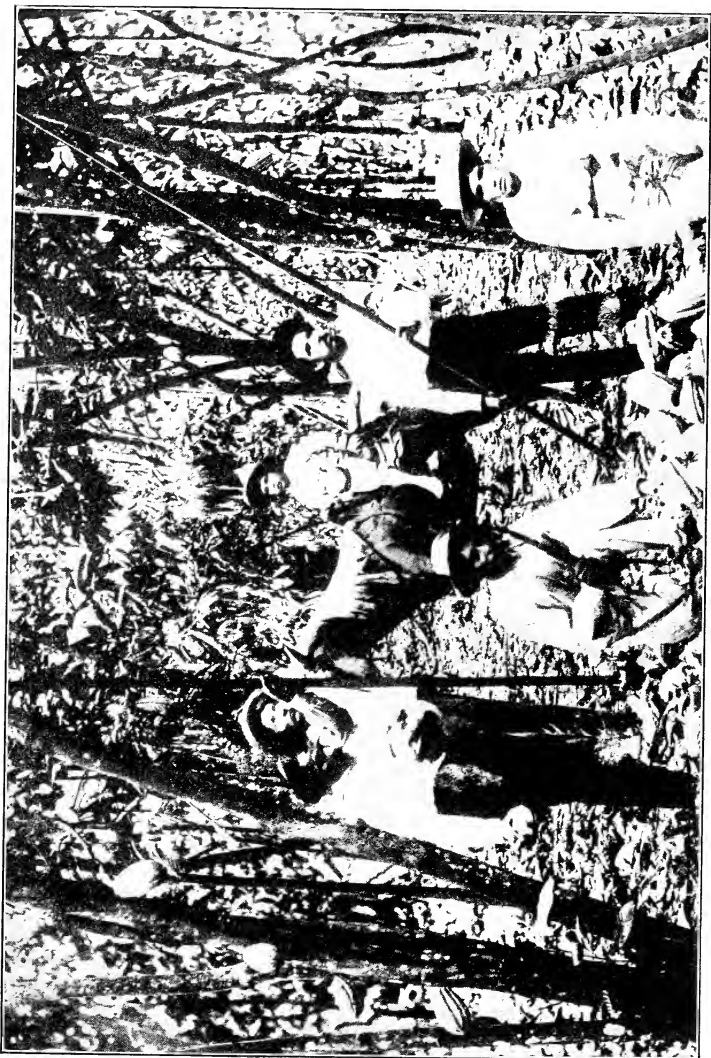
The workmen carry long poles, to one end of which knives are attached. By means of these knives the ripe pods are cut from the trees, and allowed to fall to the ground.

Instead of finding the fruit at the ends of the twigs, we find that the pods grow directly from the sides of the branches, and even from the trunks of the trees. Figure 64 will give you a good idea of this.

The pods which have been cut from the trees are allowed to remain on the ground for about twenty-four hours. The next process is that of cutting open the pods and removing the seeds from the pulp. The seeds are now fermented, either in a covered box or under a layer of earth, after which they are dried.

In order that they may dry rapidly the seeds are spread out on platforms. From time to time the Indian workmen stir the seeds by means of rakes and shovels, and sometimes with their bare feet. As the dew injures the crops, movable roofs are used on some of the larger plantations. These are fastened to frames to which wheels are attached. At night, and when it rains, the roofs are wheeled over the drying seeds.

When the seeds are thoroughly dried they are about the color of red bricks. They are then shoveled into sacks holding about 150 pounds each. The name of the plantation where the seeds are produced is usually stamped upon each sack. The cocoa is now transported

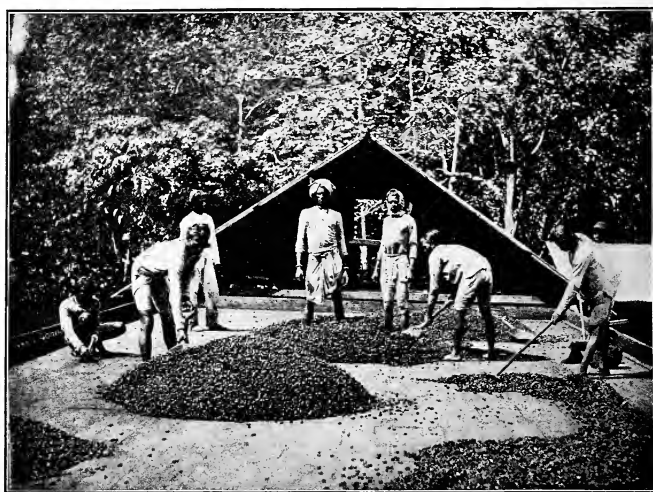


*Courtesy of Pan American Union.*

FIG. 64. — Scene on a cacao plantation, Ecuador.

to Guayaquil. From this point, as already stated, it is exported.

In the process of shipment and handling some dirt finds its way into the sacks of cocoa. When the seeds or "beans" reach their destination they must be cleaned to rid them of this. The next process is the



*Permission of Walter Baker & Co., Ltd.*

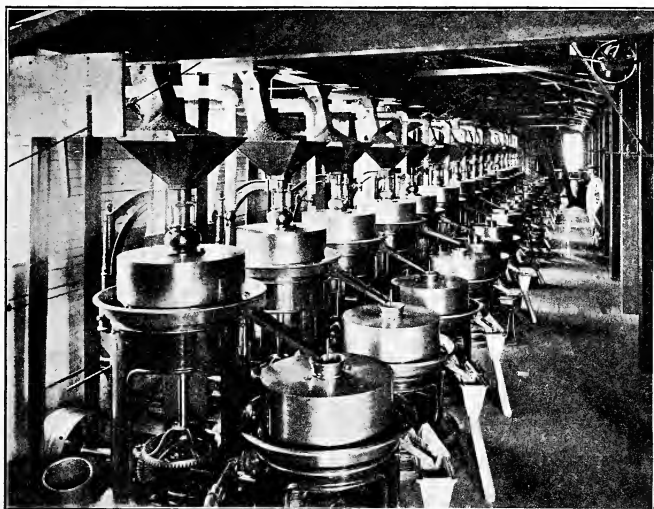
FIG. 65. — Drying cocoa seeds.

roasting of the seeds. This is done in a large revolving cylinder. As in the case of coffee, there is a pleasant *aroma* brought out by the roasting. The process loosens a shell surrounding the seeds.

But the cocoa is not yet ready for the consumer. The seeds are now ground, forming a flour or powder.

An oily substance known as "cocoa butter" is separated from the powder by pressure. In this condition the product is known as cocoa. If the oil is not removed, the product is called chocolate. Unless sugar be added to the chocolate, it is bitter.

As you know, we buy chocolate in cakes. The chocolate in its soft or pasty condition is run into molds



*Permission of Walter Baker & Co., Ltd.*

FIG. 66. — Grinding cocoa.

and then cooled. Girls wrap the cakes in paper, and the chocolate is then packed in boxes ready for shipment.

The people of the United States consume large amounts of cocoa and chocolate. Holland and Switzer-

land import large quantities of the raw product and manufacture much cocoa and chocolate. Milk is used in the manufacture of chocolate, and dairying is important in these countries. This line of manufacturing enables them to use profitably one of their own products.

## CHAPTER XVI

### THE TURTLE ISLANDS

A PART of the territory owned by the people of Ecuador lies about 600 miles west of the coast of that country. Here there is a group of small islands crossed by the equator, and called the Galapagos Islands. Locate the group. The word *galapagos* is the Spanish for turtle. The islands were given this name because when they were first visited by the Spanish explorers they were found to be inhabited by countless turtles.

Some of these turtles were immense in size, measuring several feet across, and weighing 500 or 600 pounds. It is evident that they could not have reached these islands from the mainland of South America. In addition to the turtles, there are many forms of plant and animal life not found in any other part of the world. This is because the distance of the islands from any other land makes it impossible for many forms of life to pass from other areas to these islands.

There are a number of islands in the group, the largest of which is Albemarle. The total area of the group is about twice that of the state of Rhode Island. The

latitude of these islands is  $0^{\circ}$ -38' North, to  $1^{\circ}$ -27' South, so you see they are in the doldrums.

At some time in the long-vanished past, volcanoes have poured their fiery floods over the islands, and the land has been rocked by earthquakes. Indeed, the islands are largely the result of volcanic activity, for there are at least 2000 craters upon them to-day. Winds and rains have acted upon these cones for many centuries, until now they are eroded into fantastic shapes, and are greatly reduced in altitude. The highest summits are now less than 4000 feet above the level of the sea.

Some of the craters are as many as four or five miles in diameter. The ruins are so low in some cases that the depressions are simply somewhat circular valleys affording excellent pasturage for cattle. You will be interested to know that there are thousands of wild cattle here that are hunted for their hides. The animals are especially abundant on Albemarle Island.

Although the rainfall is abundant, there is practically no vegetation within 500 feet of sea level. This is because the great flows of lava spread over the lower land, and it is to-day a wilderness of black rock. In time Nature will transform this rock into soil, and vegetation will clothe the land. Above this desolate region there is some vegetation, and still higher up there is timber.



A great drift of cold water moves northward along the western coast of South America. This current, which is known as the Humboldt Current, turns westward near the equator, and washes the southern shores of the Galapagos Islands. Of course its waters are much warmer than they are near the southern part of the continent, but they are still much colder than the ocean in equatorial latitudes. A little north of the equator there is an eastward drift of warm water. This washes the northern coast of the islands. There is therefore a difference of about twenty degrees Fahrenheit between the temperature of the water at the northern and the southern coasts of the islands. This leads to a great difference in ocean life. On the northern and the southern sides of Cape Cod, similar conditions exist. Find the cause in this case.

Imagine great, awkward, slow-moving turtles crawling over the black rocks by thousands. This was what the first European visitors saw. In the course of time some one discovered that from these strange turtles a valuable oil could be obtained. One of the very large turtles would yield five or six gallons of oil. This oil can be used as a substitute for lard, and is worth about seventy-five cents a gallon.

Naturally the animals were killed in tremendous numbers. This was an easy matter, as they cannot move rapidly enough to escape. Their numbers have

been so greatly reduced that they are in danger of extinction, and there are very few large turtles left. If you were to visit the Galapagos Islands you would see immense numbers of broken shells scattered about, indicating the extent to which the slaughtering of the turtles has been carried on.

But the turtle industry is not the only one found here. Seals are numerous, and their skins are valuable. Codfish and lobsters are caught in large numbers. Another product, which was once quite important, is the orchilla weed or dyers' moss. Before the discovery of aniline dyes this moss was very valuable because of the dyes made from it. The islands produce salt in considerable quantities.

Another point of interest regarding the Galapagos Islands is their position with reference to the Panama Canal. They occupy a somewhat similar position on the west, to that occupied by the West Indies on the east. Some day they may be of vast importance because of this position.

## CHAPTER XVII

### COLOMBIA

IN the northwest extremity of South America, and joined to North America by the narrow Isthmus of Panama, lies a country of very irregular shape. This is the Republic of Colombia. It is made up of nine divisions called *departments*. There is water upon two sides of Colombia. It has about 1000 miles of Pacific coast line on the west. The coast line of the Caribbean Sea on the north is nearly as long. The Republics of Venezuela and Brazil lie to the east, and Ecuador borders it on the south. In size it approaches the great territory of Alaska, and its chief river, the Magdalena, stands in about the same relation to Colombia as does the mighty Yukon to Alaska. There are about as many people in Colombia as there are in greater New York.

Like many other parts of South America, Colombia has a history reaching back to the early Spanish rule. The coast of the Caribbean Sea bordering on Colombia and Venezuela, from Cape Yucatan to the delta of the Orinoco River, was called the "Spanish Main." Many

years ago the name Tierra Firma was given the territory now comprised in Colombia, Venezuela and the Guianas. The kingdom of New Granada lay to the south. At that time the kingdom of Tierra Firma was the most powerful of all the countries of South America. In the year 1831 Colombia became independent of Spain. In 1903 Panama was separated from Colombia. On one of his final voyages, Columbus discovered the shores of this country, and we thus have the name Colombia. The Goajira Peninsula projects into the Caribbean and ends in Point Gallinas. This is the most northern land on the continent.

Extending from the northern to the southern part of Colombia, and coming close together near the southern boundary, are three mountain ranges. These ranges of the Andes are called the Western, Central and Eastern Cordillera. There is still another lower range near the Pacific Coast, and extending from the middle of the country north through Panama. The names *occidental* and *oriental* are sometimes given the Western and Eastern Cordilleras.

These ranges are situated so far apart that there are extensive valleys and table-lands lying between. The western half of Colombia is an extensive plain broken by hills. This territory is watered by numerous rivers and smaller streams. In the southeast there is an extension of the central plain or llanos of South



FIG. 67.— Tequendama Falls, Colombia.

America. This is one of the great cattle-raising districts.

These llanos or prairies extend as far as Brazil and Venezuela. Rich grasses cover these plains the entire year. There are no large forests here. Rain is abundant, and the soil fertile. On the llanos and in the valleys throughout Colombia the soil is black, and extends to a considerable depth. With slight cultivation valuable crops could be produced. There is, however, no opportunity to ship these crops to market.

On account of the many high mountain ranges, there are numerous table-lands and plateaus. The most extensive and fertile of these table-lands lie on either side of the Magdalena River and reach to the shoulders of the mountain ranges.

In the valleys of the rivers and upon the mountain slopes, are vast forest areas. There are in Colombia some of the most dense forests in South America. Here numerous cabinet and dye woods are found. Medicinal plants and herbs grow in profusion.

Toward the northern portion of the country the mountain ranges become lower, and for many miles inland from the coast the country is flat or rolling. There are numerous lakes scattered throughout the republic. With high mountains, level table-lands and fertile valleys, Colombia has almost every variety of scenery, climate and soil to be found in the world.

The principal highway of the country is the Magdalena River. Railways are few, and to reach Bogota, the capital and largest city, one must cross from Buenaventura on the Pacific coast, or travel up the Magdalena. The river rises in the Andes under the equator, two miles above sea level. In its upper course it flows over great rocks and cliffs, and forms many rapid whirlpools. Many times it changes its course, thus forming or washing away islands or leaving towns inland. It carries much silt and the waters are muddy. Let us take a trip by boat up this great river and visit the capital city.

The steamboat on which we travel reminds us of the old type of steamboat used on the Mississippi. Our boat burns wood, and we find large piles along the river banks from which we replenish our stock of fuel. Indeed, there are many things about the Magdalena that remind us of the Mississippi. The waters are muddy. There are two main arms of the delta six miles apart. In the mouth of the river is the Island of Gomez. The western is the larger branch and is two miles wide. The other branch is half a mile in width. This delta and island are somewhat similar to the delta of the Amazon and Marajo Island.

The town of Salgor is just west of the delta. From Salgor to Barranquilla, a city of 40,000, we may travel by rail. This journey is only a few miles in length.

Our steamboat then takes us 500 miles up the Magdalena to Honda. As we go north the valley narrows and the highlands come closer to the river. Here and there along the route the natives are seen pushing their long canoes upstream. These canoes or *bungoes* are covered with oval roofs of bamboo or thatch. They push their canoes by walking along the bank and using paddles or long poles. In coming downstream these canoes are pushed into the river and drift with the current.

From the delta country to the *Dique*, a wide canal connecting the river with the Bay of Cartagena, the land along the Magdalena is low and flat. This canal was opened by Philip II of Spain, and later became filled up. After many years it was again opened in 1881. The lowland on either side was once occupied by vast estates or plantations. In this country there was slavery as in our southern states. When slavery was abolished in Colombia these estates went into disuse. In time all of the delta land will be reclaimed.

Near the delta are wooded swamps. Pelicans, cranes, flamingoes and numerous fishing birds abound. As our boat sails along we pass through a country partially covered by water. Mosquitoes are very troublesome. These swamps are caused by the overflow of the river. Only negroes live here. Their rude huts are usually built directly upon the bank of the river, and



at high water the houses may be flooded. These people prefer to live in this fashion so as to see the boats pass up and down, and to fish in the river without walking a distance. They sometimes construct dikes in front of their homes by using trunks of fallen trees.

All along the way fish of many kinds are found in abundance. Dried *bacalls* or salmon are the fish of commerce. Alligators, sunning themselves on islands or rocks, tumble into the water as the boat approaches. Even crocodiles are occasionally seen. These may measure thirty feet in length. The huge animals stretch out in the sun with closed eyes and open mouth. A small gnat which is very annoying to the crocodile gathers in great numbers on the creature's palate. A species of bird alights without fear upon the head of the crocodile and eats these gnats. Many reptiles of the tropics are to be seen in the water and on the land.

Farther up the river the region is more elevated. Here the mango and native orange and citron grow in profusion. The banyan, the calabash, the plantain, the wild oleander and the nut-palm flourish. Birds of brilliant plumage are everywhere seen. In the dense forests are monkeys, jaguars and deer, and here the boa, a huge snake, is sometimes found.

As our boat goes farther south we come to a region where in the mountains are many extinct volcanoes. The scenery is grand. In portions of the valley near

the river, the soil is fertile and the climate healthful. There are few negroes here, but the native Indian of Colombia makes this region his home. These Indians are quite civilized. They are short and muscular and are copper-colored. The face is smooth. In manner they are gracious and polite.

Had we gone down the western coast of Colombia to Buenaventura we should have traveled over a narrow gauge railway a distance of 70 miles to Cali, a town 3000 feet above sea level. Cali is situated over the Western Cordillera in the valley of the Cauca River. This is one of the most beautiful and fertile valleys in the republic. From Cali we should travel by mule through many dangerous passes over the Central Cordillera to the edge of the table-land upon which Bogota is situated. A coach would then take us to the city, a distance of perhaps 30 miles. This trip would require about two weeks.

On leaving our boat at Honda after our river trip, we travel by mules up the mountain slopes. This is a journey of three days if the mountain paths are in good condition.

Bogota is situated upon a fertile table-land over 8,600 feet above sea level. In spite of its altitude, it has a delightful climate. Can you explain this? It is a city of 125,000 population. Long ago it was called Santa Fé de Bogota. It was founded in the year 1536,

and at the close of the sixteenth century was the capital of New Granada. We are glad to reach Bogota and to seek rest after our long journey.

We are surprised to find so large and flourishing a city as Bogota at so great a distance from the large cities with which we are familiar. The houses are



FIG. 68. — Street in Bogota.

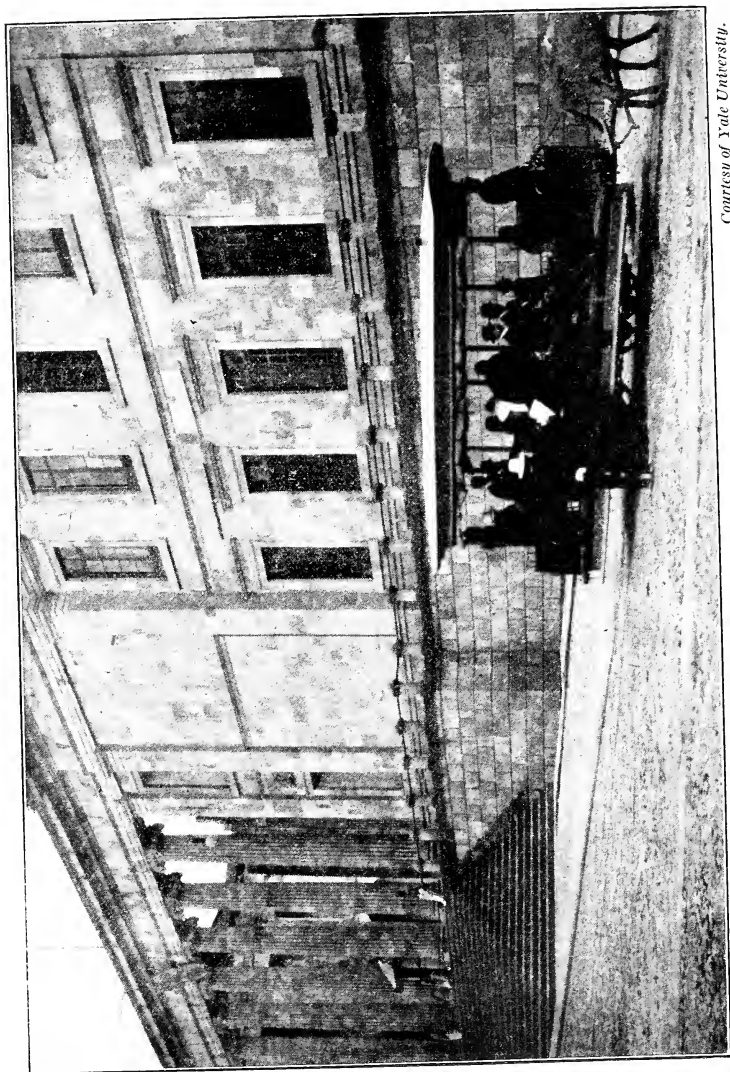
usually not more than two stories in height, owing to the frequency of earthquake shocks. The streets of the city are narrow, with few electric railways. The squares and plazas are much frequented. Telephones are in general use, and a telegraph line connects Bogota with the outside world. Is it not strange that in far-off Bogota the daily papers contain the same telegraphic

news from Europe and Asia that comes to us? There are theaters, libraries, schools and colleges.

The city is built in terraces as the ground rises abruptly to the eastward. In the middle of each east-and-west street is a stream of water which runs rapidly down the slope. These streams flow into the San Francisco River. The streets are paved with cobblestones. The sidewalks are of smooth stone or brick, and hardly wide enough to permit two persons to pass each other. Tramways connect Bogota with surrounding towns. Gas and electricity are in common use. The houses, or walls surrounding them, are built close to the street, passageways leading into the living rooms. In the interior is a *patio* or hollow square. The sleeping rooms are on the second story or balcony, and open on to the patio.

Bolivar plaza in the center of the city is named in honor of General Simon Bolivar, the *Liberator*. The capital building, the metropolitan cathedral and the palace of the Spanish viceroys, erected centuries ago, surround the plaza. The Plaza de los Martiros or *Plaza of the Martyrs*, is another historic spot. The city is extremely quiet and orderly.

The plateau upon which Bogota is built is some 70 miles long and 30 broad. On this fertile plateau lakes and streams abound. The river Funza drains the rivers of this plateau into the Magdalena. The falls of



*Courtesy of Yale University.*

FIG. 69. — Bogotá. The Capitol facing the Plaza Bolívar. (Photo by Hiram Bingham.)

Tequendama are in the Funza. The river breaks through a gorge where the water drops 600 feet. Coal is found in immense quantities near Bogota, and iron ore exists. The Irish potato is the chief crop. Corn, and particularly wheat and rye, are extensively cultivated. Small vegetables such as peas and beans, celery, lettuce, parsnips and all the common vegetables of our country may be had fresh the year round.

The chief industry on the farms or *haciendas* is cattle raising. Hides and tallow are shipped. There are many sheep. At Zipaquira, about 30 miles north of Bogota, are located some of the most famous salt mines in the world. Here a solid mass of rock salt extends into the earth to a great depth. The rock in which it is found is crushed, and the pure salt is obtained after boiling in huge vats. The crystallized salt is made into cylinders of about 25 pounds each, and carried on the backs of mules to the river where it is shipped.

Colombia has several interesting cities. Cartagena is on the coast some distance south of the mouth of the Magdalena. It is an old city, and in the seventeenth century was a great commercial and naval center. When the Dique Canal was abandoned Cartagena lost much of its glory. In the time of Philip II the town was surrounded by a wall 30 feet high and so thick that it remains almost unchanged to-day. Forts were built at intervals on the walls, and underground passages led



*Courtesy of Rafael del Castillo & Co., New York.*

FIG. 70.—A modern business building in Cartagena.

to these. There is a fine harbor. The red tiles of the cathedral roofs have been shining in the sun for more than three centuries. The city has been called "The Cradle of Liberty on the South American Continent." Trade is now reviving in Cartagena. The railroad connecting Barranquilla and Salgor takes much of the trade from Cartagena.

Buenaventura is on the Pacific coast about midway from north to south. It is connected by rail with San José de Cauca some 25 miles distant, and Cali, 50 miles inland from Cauca. Popayan is on the Cauca River far toward the southern part of the country. Medellin is another interior city. It is the center of the principal mining district. River and railway connect it with the outside world. Medellin lies between the Western and Central Cordillera. Bucaramanga is east of the Magdalena on the table-land. Socorro lies south of Bucaramanga. None of these cities has more than 50,000 population.

Barranquilla is now a most important city. It is connected by rail with Sabanilla and Puerto Colombia on the coast, and much of the sea trade goes to these places. The streets are sandy, and the houses poorly constructed. The better dwellings have tile roofs and are built of wood or brick. The merchants dress in white and wear high, conical straw hats. Santa Marta, on the coast east of where the Magdalena enters the



Caribbean, was once a flourishing town. Its trade has now gone largely to Barranquilla and Salgor, although it still exports large quantities of bananas. The harbor of Santa Marta is surrounded by snow-capped mountains. The city is over 400 years old, and the cathedral dates from the time of Columbus. There are few white people. The streets are generally narrow, crooked and unimproved. Burros are used in transportation.

Colombia furnishes nearly all of the emeralds used in the world. The emerald mines are more valuable than the diamond mines. The emerald is a variety of *beryl*. The most valuable single emerald of modern times was obtained in these mines and weighs more than eight ounces. Gold and silver are mined, and Colombia produces more platinum than any other country in the world save Russia. Coal and iron are found in abundance. Indeed, the coal fields of Colombia may some day supply the markets of our own country. These coal and iron mines are as yet undeveloped. Petroleum also is found in this region.

In the warm, low valleys sugar cane, coffee, cocoa and quinine are abundant. Tobacco, bananas and cotton are grown in the tropical regions. On the uplands coffee, apples, peaches, potatoes, wheat, rye, barley and oats are harvested. On the table-lands stock is raised, and the prairies are covered with cattle;

sheep and horses. Colombia has more timber than any other country of its size in South America. There are many varieties of cabinet and dye woods, including mahogany and Spanish cedar. Rubber and vegetable ivory or ivory nuts, from which the so-called bone buttons are made, are obtained in abundance. There are cocoa, indigo, and sarsaparilla and other products of the forest.

Of the exports, bananas are an important item. From Santa Marta alone large quantities of bananas are exported to the United States and to Europe. Cocoa, coffee, ivory nuts, vegetable-dyes, minerals, woods and hides are exported. Most of the export work is done by small traders who buy from the interior and ship to the coast. Colombia trades chiefly with the United States, Great Britain and Germany. The United States buys from Colombia twice as much as she sells to that country.

The imports consist largely of manufactured articles, such as foodstuffs, flour, canned goods, cotton goods, ready-made clothing, shoes, hardware, cutlery, glass, petroleum, stationery, brass, jewelry, and brandy. To all interior cities these commodities have to be shipped and re-shipped and packed on the backs of mules. The lack of transportation facilities tends to keep prices high. As yet there are few railroads. There are mule trains in the mountains and some 700 small vessels on

the Magdalena and other rivers, and the natives, who carry bundles on their heads, do most of the transporting of merchandise. Short railroads connect Bogota with Tocatativa, Zipaquira and Soacha, surrounding towns. Thus the mines have direct connection with the Magdalena and with the great outside world.

The natives are uniformly courteous. They live on fish, fowls and fruits including pineapples, yams, mandioc and bananas. Salted fish, principally salmon, is carried to interior points. Many of the rivers are spanned by rope bridges. Travelers are frequently carried over the mountains in chairs.

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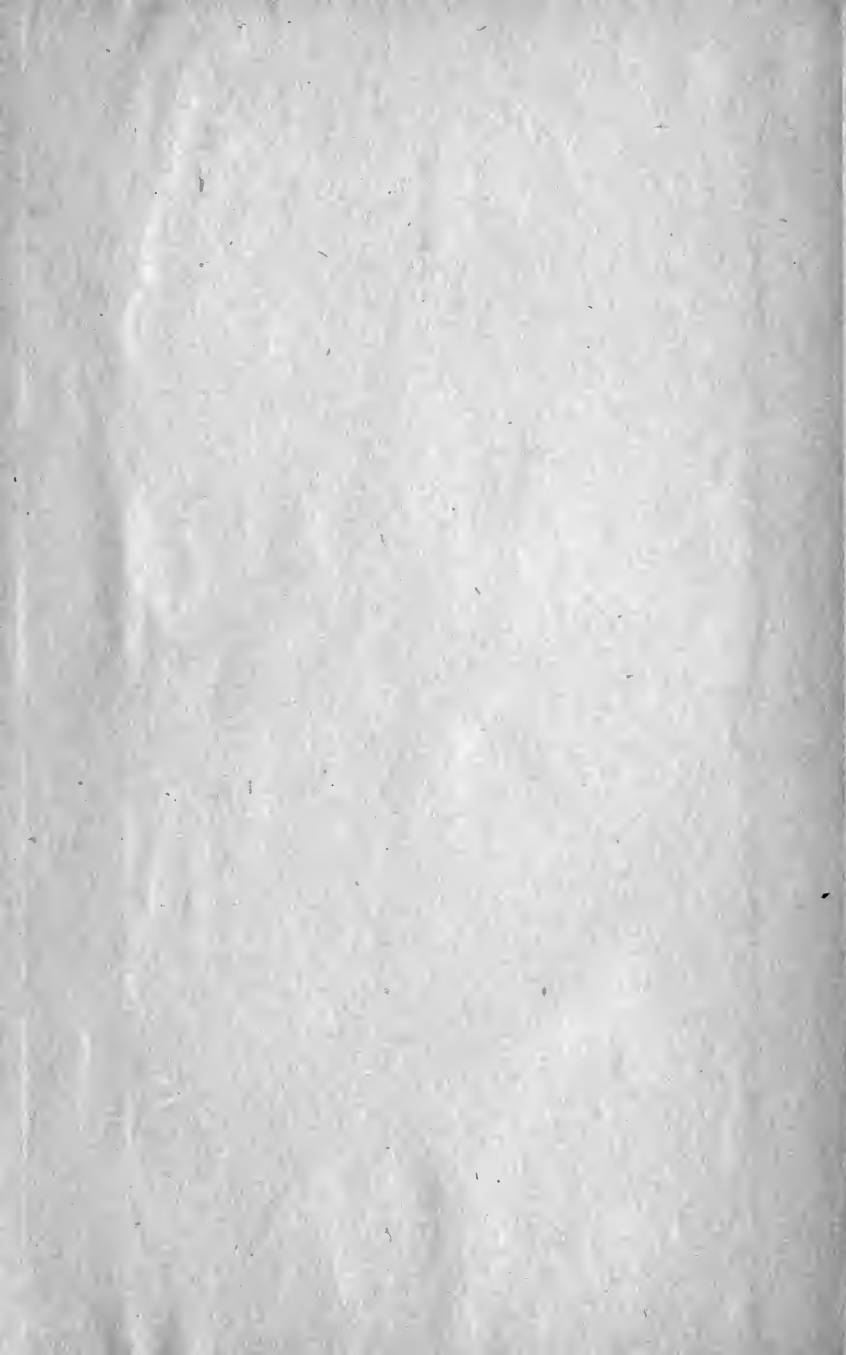
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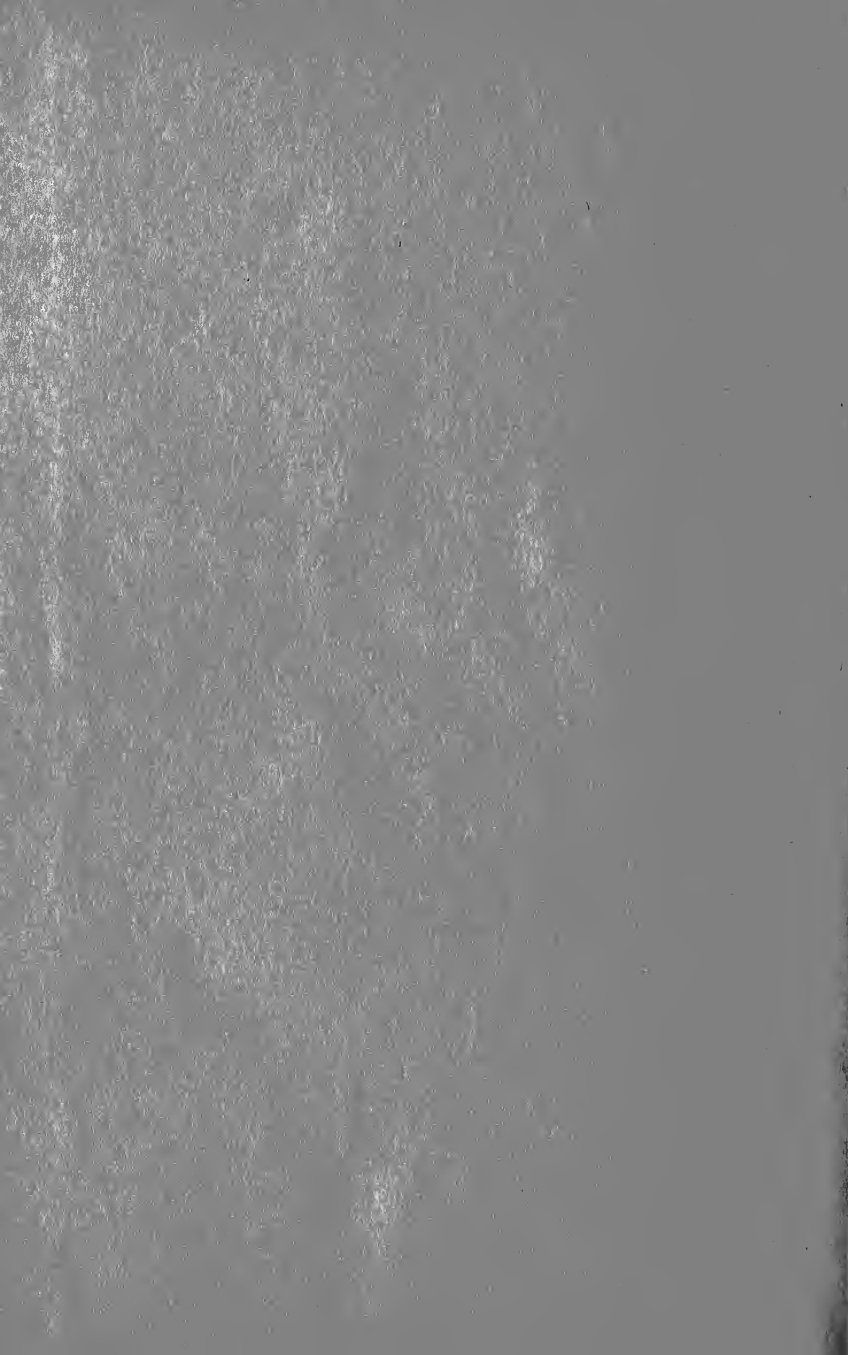
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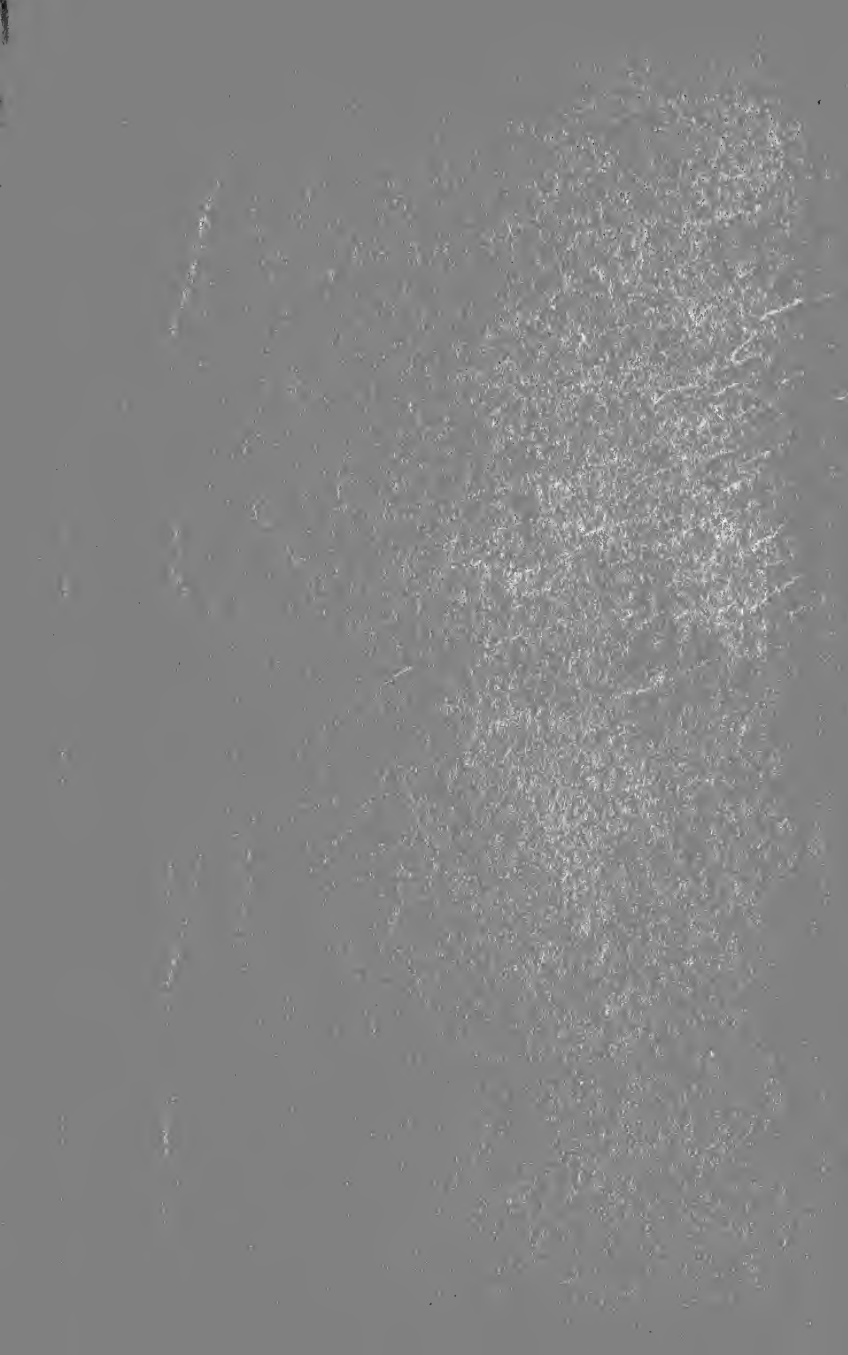
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